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

OF THE

FOOD RESEARCH INSTITUTE

VOL. XI, NO. 4

(Price \$1.00)

DECEMBER 1934

THE WORLD WHEAT SITUATION, 1933-34

A REVIEW OF THE CROP YEAR

TO OBSERVERS concerned with improvement in the world wheat situation, the crop year 1933-34 was one of disappointed hopes and expectations. Early indications pointed toward a world wheat crop ex-Russia small enough to assure substantial reduction of the world wheat surplus and to foreshadow a rise in wheat prices, with an accompanying measure of relief to wheat producers and to governments deeply engaged in assisting producers.

Week by week as the season progressed, however, the crop forecasts and estimates made larger and larger world totals; and appraisals standing in December 1934 were some 300 million bushels—nearly 10 per cent—above forecasts current in August and September 1933. World wheat prices, low when the crop year opened, tended to fall rather than to rise in the early months. Even with an advance in the spring and early summer of 1934 associated with unfavorable development of the 1934 crop, the average crop-year price of wheat (gold basis) on free import markets fell to a new low—an occurrence avoided, however, in several countries where national currencies were sufficiently depreciated, or where protective devices provided sufficient shelter.

Governmental price fixing, direct and indirect subsidization of wheat exports, and barriers to wheat imports were more widely in evidence than ever before. Year-end stocks were brought to a new high level when the year closed. The first attempt at governmental co-operation in international wheat control was unsuccessful in its major objectives. "Wheat adjustment" in the United States, domestically a qualified success, had little or no favorable influence on the current international position. The volume of international trade in wheat and flour plumbed new post-war depths (though this was early anticipated), and ruled at the level characteristic in the first decade of the twentieth century.

STANFORD UNIVERSITY, CALIFORNIA

December 1934

WHEAT STUDIES
OF THE
FOOD RESEARCH INSTITUTE

Entered as second-class matter February 11, 1925, at the Post Office at Palo Alto, Stanford University Branch, California, under the Act of August 24, 1912.

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These developments occurred in spite of a world ex-Russian wheat crop about 100 million bushels smaller in 1933 than in each of the three preceding years and 300 million

smaller than the bumper crop of 1928. They were possible partly because initial stocks of old-crop wheat were of record size in August 1933, so that (even with only moderate exports from Russia) total supplies for the crop year were practically as large as in the three preceding years, and over 100 million bushels larger than in 1928-29. The crop of 1933, huge in importing Europe and short only in North America, was also distributed geographically in such a way as to minimize the flow of wheat in international trade. To this outcome a large crop in China contributed, as did maintenance and some further strengthening of barriers to wheat imports.

World wheat disappearance again fell far below what could have been expected from the upward trend characteristic of pre-depression post-war years. Adverse influences associated with general economic depression and the differentially high prices accorded in many countries to wheat and wheat products continued to operate in 1933-34. The decline in disappearance from 1932-33, however, was slight, and represented a reduction of wheat use mainly in the United States and (of imported wheat) in China somewhat larger than an increased use of wheat in Europe, especially in the Danube basin. The year closed with "world" stocks of old-crop wheat at a new high level. Only the carryover in the United States, where the crop of 1933 fell below domestic requirements, was heavily reduced during the course of the year. Conspicuously heavy stocks remained in importing Europe and the Southern Hemisphere.

The adventure in international wheat control embodied in the International Wheat Agreement of August 1933 cannot as yet be appraised adequately. Clearly, however, the major immediate objectives—a sustained rise

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in wheat prices, implemented through control of exports, to be followed by lowering of import barriers and expansion of consumption—were not achieved. The export quota system proved unworkable mainly because world crops exceeded early expectations, bringing import demand below anticipations and placing an unexpectedly heavy burden upon Argentina, whose quota was exceeded. In the more remote objective—reduction of wheat production in 1934—the Agreement itself had little effect in comparison with the purely domestic acreage-reduction policy of the United States or with drought that curtailed wheat production practically throughout the Northern Hemisphere. An attempt to expand the scope of the Agreement to include closer control of exports and fixation of minimum

levels for international wheat prices failed when Argentina, with the tacit support of British opinion, refused to participate.

Regarded as a whole, operations under the wheat adjustment plan in the United States had as their outstanding effect enhancement of the income of wheat farmers, at the expense of consumers. The direction of price effect was toward enhancement, but by an amount easily exaggerated. Flour consumption was adversely affected, though not in large degree. Reduction of acreage attributable to the plan was substantial but below hopes and expectations. Exports were enlarged through the subsidy of Pacific Northwest wheat rather than reduced through the effects of the plan as a whole on international wheat-price relationships.

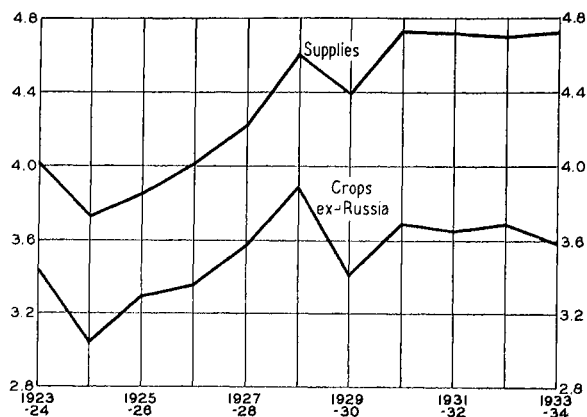
I. WORLD WHEAT SUPPLIES

Unprecedentedly large stocks of old-crop wheat and a 1933 wheat crop only a little below average in size combined to keep wheat supplies in the world ex-Russia¹ at an excessively high level in 1933-34. As in the five

seriously underestimated at the beginning of the season, causing early and mid-season forecasts of year-end stocks to be generally too low.

With Russian exports approximating 35 million bushels, wheat supplies in the world ex-Russia were about the same size as in each of the three preceding years and substantially larger than in 1928-29 or 1929-30 (Chart 1). The distribution of these supplies, general economic conditions, and in a number of countries governmental policies with respect to wheat prices, milling, and imports operated against heavy international trade in wheat and also against heavy consumption. Consequently, at the close of 1933-34 wheat stocks in the world ex-Russia probably stood at somewhat the highest level ever witnessed.

CHART 1.—WORLD WHEAT SUPPLIES, EX-RUSSIA,
FROM 1923-24*
(Billion bushels)



* Data from Table XXXI.

preceding years, when supplies were also burdensome, the quantity of wheat available was

¹ The term "world ex-Russia" is used with reference to production to include all countries named in Table II; with reference to stocks, to include stocks afloat and stocks in the countries listed in Table II with the exception of Mexico, Uruguay, Chile, Chosen, South Africa, and New Zealand.

INITIAL STOCKS

According to our present rough estimates, world wheat stocks (ex-Russia) approximated 1,100 million bushels about August 1, 1933—around 100 million bushels in excess of the previous peaks in 1931 and 1932 (Table XII). Again stocks were concentrated heavily in North America, with both Canadian and United States carryovers at new high levels (Table XIII). Importing Europe also had an unusually large carryover, reflecting mainly the large domestic crops of France, Germany, and

Spain in 1932. Supplies remaining in Australia and Argentina were of good size but not strikingly large. Elsewhere stocks were low or moderately low. As regards Russian wheat stocks and stocks of imported wheat and flour in China—neither of which is included in our “world total”—the former were presumably small, the latter relatively large.

PRODUCTION IN 1933

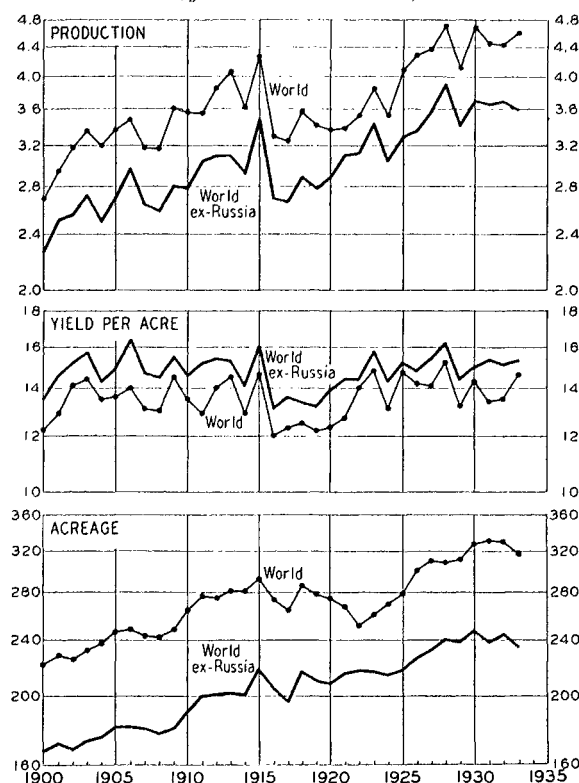
Size of the world wheat crop.—Excluding Russian production, the world wheat crop of 1933 now appears to have been somewhat the smallest since 1929 (Chart 2, upper tier). In contrast with the situation in 1929, however, reduction in output in 1933 was primarily attributable to curtailment of acreage rather than to a low average yield per acre (Chart 2, bottom and middle tiers). Indeed, harvested wheat acreage in the world ex-Russia is reported to have been smaller in 1933 than in any year since 1927, reflecting the influence of drought in the United States and, to a lesser extent, of low wheat prices in all four of the major exporting countries. Excellent growing and harvesting weather throughout most of Europe about offset the effect on acre yields of extremely unfavorable meteorological conditions in North America, with the result that the yield per acre of wheat in the world ex-Russia averaged 15.3 bushels, or slightly more than the average for the ten preceding years (Table I).

According to official estimates, Russia produced a bumper wheat crop in 1933, a crop 30 million bushels larger than the previous record outturn of 1930 which yielded exports of 114 million bushels, as contrasted with 34 millions in 1933–34. Including Russian production at the indicated official figure, the world crop of 1933 was the third largest on record, smaller only than the crops of 1928 and 1930. But in view of the restricted exports from Russia in most recent years, more significance attaches to the relative size of production in the world ex-Russia than in the world inclusive of Russia.

Early-season forecasts of the world crop, ex-Russia, of 1933 were lower in relation to the final and semi-final estimates which appeared later in the season than were the early

forecasts of any of the five preceding crops, all of which had been underestimated. Our successive appraisals of the 1933 crop, which

CHART 2.—WORLD WHEAT PRODUCTION, YIELD PER ACRE, AND ACREAGE, FROM 1900*
(Billion bushels; bushels per acre; million acres;
logarithmic vertical scale)



* Totals include all countries listed in Table II, except Mexico. These series are the same as given in WHEAT STUDIES, April 1933, Vol. IX, No. 7, except that recently revised official estimates have been substituted for Food Research Institute estimates for the United States.

were generally in line with other appraisals of about the same time, were as follows in million bushels:

	World ex- Russia	Four chief export- ers	Euro- pean import- ers	Others
Mid-September 1933...	3,288	1,141	1,226	921
Mid-January 1934....	3,482	1,215	1,333	934
Mid-May 1934.....	3,529	1,227	1,362	940
Mid-December 1934...	3,599	1,258	1,378	963

The net increase of over 300 million bushels in these estimates between September 1933 and December 1934 reflected sizable increases in the appraisal of crops in both importing and exporting areas. Because of these changes our early and mid-season forecasts of year-

end stocks proved substantially too low. In retrospect, it seems somewhat surprising that early trade forecasts for 1933-34 proved as accurate as they did; but the total volume of trade depended upon import requirements, and the changes in crop forecasts occurred largely in exporting countries or in importing countries for which the allowances for probable imports were initially small and therefore not subject to much reduction as crop forecasts were raised.

Distribution of the world crop.—The distribution of the world wheat crop of 1933, together with data on acreage and yield per acre in the principal areas, is shown in perspective in Chart 3. The two outstanding features were the huge harvest in importing Europe and the strikingly small outturn in North America, particularly in the United States.

Never before in either pre-war or post-war years¹ did the countries of importing Europe secure as large an aggregate wheat crop as in 1933. Record large harvests were reported in ten of the nineteen continental countries of this group — Germany, Italy, Netherlands, Sweden, Switzerland, Greece, Czechoslovakia, Latvia, Estonia, and Finland. In addition, France had the largest outturn reported since 1907; Portugal had the second largest and Poland and Denmark the third largest on record; Austria had the largest in post-war years; and the British crop exceeded all crops back to 1922. Of the various European importing countries, only Spain and Lithuania harvested outturns below the 1928-32 average in size (Table II).

The large crops in importing Europe in 1933 were generally attributable to two factors: (1) extraordinarily favorable weather conditions which resulted in unusually high

yields per acre, and (2) governmental measures with respect to wheat which have operated over the past few years to stimulate expansion of wheat acreage and intensity of cultivation. For importing Europe as a whole both the average yield per acre and the wheat acreage were the largest on record. Almost equally striking is the fact that the new record high yield per acre of 1933 followed immediately after establishment of only a slightly lower record in 1932.

Of the individual importing countries, Germany, Italy, Greece, and Czechoslovakia had both record high acre yields of wheat and unprecedentedly large areas; France and Austria had record yields per acre and at least moderately large areas; while Netherlands, Sweden, Estonia, and Latvia had wheat areas larger than ever before and, with the exception of Estonia, also distinctly high, though not record, yields per acre. In most of the remaining importing countries, wheat acreage and acre yields were both well above average. Spain and Lithuania were notable exceptions, having yields per acre appreciably below corresponding averages for the past decade.

Not only in the importing countries of Europe, but also in the Danube exporting countries, wheat production, acreage, and yields per acre were all high in 1933. Although the total Danubian crop was reported to be a little larger than the previous record crops of 1928 and 1931, none of the individual countries harvested a crop of record size. Hungary and Bulgaria harvested their second largest post-war crops, Rumania and Yugoslavia their third largest. Hungary secured a new high yield per acre; and yields in the other countries were also notably heavy. Although none of the Danube countries had a strikingly large area devoted to wheat for the 1933 crop, in all except Hungary wheat acreage harvested was somewhat above the 1928-32 average.

In the United States, in contrast to the situation in Europe, both winter and spring wheat crops turned out poorly. This was mainly due to drought, but also to severe winter weather. At 528 million bushels, the total outturn was the smallest since 1896, according to revised official production estimates.² The acreage harvested was the small-

¹ See M. K. Bennett, "World Wheat Crops, 1885-1932," *WHEAT STUDIES*, April 1933, IX, 267-73; and Table I.

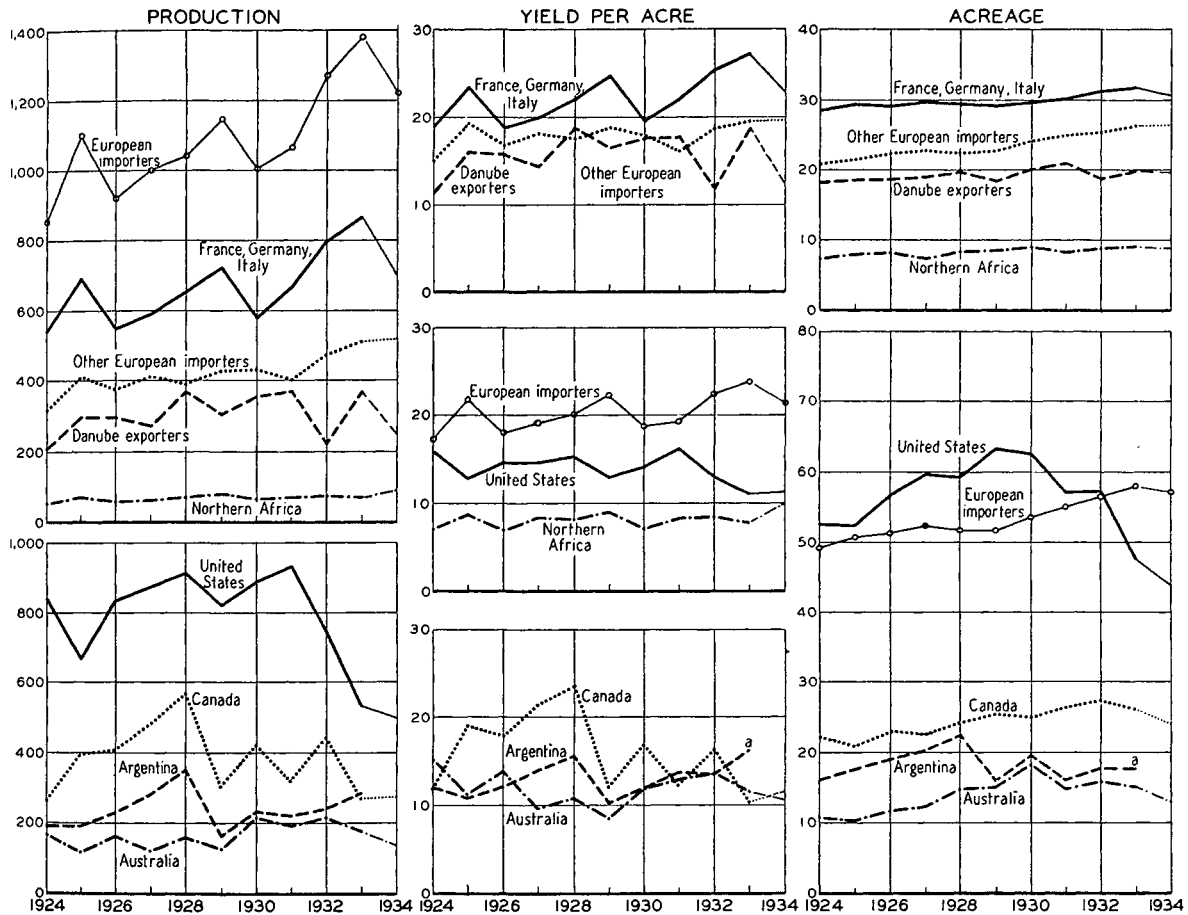
² In September 1934 the U.S. Department of Agriculture published *Revised Estimates of Wheat Acreage, Yield and Production, 1866-1929*. Prior to 1910 these revised estimates, like the original ones, run substantially below the level of production indicated by what appear to be fairly reliable data on disposition of United States wheat (see Holbrook Working, "Wheat Acreage and Production in the United States since 1866," *WHEAT STUDIES*, June 1926, II, 239-41).

est since 1917; the average yield per acre, the lowest since 1881. Winter-wheat sowings were curtailed by drought and low wheat prices. Continued drought and high winds

deterioration. These adverse weather conditions resulted in a strikingly small output of hard red winter wheat and a moderately small crop of soft red winter (Table VI).

CHART 3.—WHEAT PRODUCTION, YIELD PER ACRE, AND ACREAGE IN PRINCIPAL COUNTRIES AND REGIONS, FROM 1924*

(Million bushels; bushels per acre; million acres)



* See Tables I-IV.

^a Acreage figure is for sown acreage minus average abandonment; yield per acre calculated on this acreage figure. For comparison with earlier years the acreage indicated for 1933 is probably too low, the yield per acre too high.

through November reduced crop condition to such an extent that on December 1 it was officially reported to be the lowest on record (since 1863). The later winter months were generally dry and cold; abandonment of winter-wheat acreage approximated 33 per cent—the highest percentage abandonment on record (since 1900); and the condition of the crop on both April 1 and May 1 was the lowest ever reported for those dates. Drought in June was apparently responsible for some further

On the other hand, white wheat (including some spring varieties) made a full crop.

United States spring wheat was sown later than usual on the largest area planted since 1919,¹ the increase largely representing heavy resowings in the Pacific Northwest where winterkilling had been severe. Abandonment of spring wheat was heavy, and the condition

¹ To judge by data on total planted acreage furnished directly by the U.S. Department of Agriculture, and estimates of winter-wheat sowings (Table VII).

of the crop was lowered, mainly by drought and recurrent heat waves in June and the latter part of July. The outturn of hard red spring wheat was notably small, but less strikingly so than that of hard red winter or of durum wheat (Table VI).

In Canada, less spring wheat was planted in 1933 than in either of the two preceding years, and after June, deterioration was rapid as a result of hot weather and drought. In addition, grasshoppers, other insects, and frost took substantial toll from the crop. The standing official estimate of the total Canadian crop is 270 million bushels, but this figure has been officially recognized to be too low by around 12-15 million bushels.¹ In any case, the crop appears to be the smallest since 1924, and the yield per acre either the third or fourth lowest since 1885.

The Australian crop, like the crops of North America, suffered as a result of drought. It was smaller than any of the three crops which immediately preceded it and below the 1928-32 average; yet as compared with earlier crops it was relatively large. The yield per acre was a little below the ten-year (1923-32) average; but the harvested acreage, though below the average for the preceding five years, was the fourth largest ever reported. Reduction in wheat acreage of about 800,000 acres from 1932 and the moderately low average yield per acre in 1933 primarily reflected drought which prevailed (particularly in New South Wales) practically throughout the planting and early growing periods. Rains in December and early January affected yields adversely and lowered crop quality.

Argentina's crop was clearly a bumper. Now estimated at 286 million bushels, it ranks as the second largest on record. The area reported sown for this crop was somewhat smaller than the 1928-32 average (Table

VII); but abandonment was light, and the yield per acre, and quality, were high.

As regards other significant wheat-producing countries, only Japan and Chile harvested crops of record size in 1933. In both of these countries direct or indirect governmental stimulus to the expansion of wheat acreage was an important factor. The yield per acre in Japan was relatively high, though not the highest on record; while that in Chile was just about equal to the 1923-32 average. The wheat crops of Morocco and Algeria, harvested from notably large areas, were a little above average (1928-32) in size. In contrast, Egypt and Tunis secured relatively small crops from areas appreciably reduced, as compared with the areas harvested in the five preceding years. Turkey, Palestine, Syria, and Lebanon, Manchuria, and Mexico (Tables VIII and II), all harvested crops substantially below average in size. On the other hand, the smaller producers of the Southern Hemisphere—Uruguay, New Zealand, and South Africa—all had 1933 crops equal to or larger than they had produced on the average in 1928-32.

Wheat quality.—As a whole, the world wheat crop of 1933 was of notably good quality.² The crops of importing Europe, favored by excellent growing and harvesting weather, turned out to be extraordinarily fine, with more than the usual proportion of domestic grain suitable for bread making without the addition of any considerable quantity of foreign wheat. In the Danube basin the wheats were generally fairly good, and better than in 1932, except in Rumania. Russian export wheat was reported to be irregular in quality, as is more or less usual.

Although distinctly of good quality, the Canadian crop of 1933 graded substantially lower, and averaged a trifle lower in protein than in 1932, when general crop quality was apparently the highest in a number of years (Table IX). The United States crop, on the other hand, graded higher and had a higher gluten content in 1933 than in 1932,³ while the number of bushels ground per barrel of flour was approximately the same in the two years.

In Argentina, the crop of 1933 was notably better than average: it was of good weight

¹ See the *Monthly Review of the Wheat Situation*, October 20, 1934 (p. 25), published by the Dominion Bureau of Statistics of Canada.

² Some of the details of crop quality are available in the *Special Grain Review*, December 14, 1933, published by the Federal-State Grain, Hay, and Feed Market News Service.

³ Winter wheat tested by the Kansas Laboratory was reported to average 13.58 per cent protein in 1933-34, 12.70 per cent in 1932-33, 11.87 per cent in 1931-32, and 12.46 per cent in 1930-31.

and generally favorably reported by European millers. In contrast, the Australian crop was probably below normal in quality, as a result of damage from rains during harvest. Algerian wheat was reported to be better than average, while the crops of Morocco and Tunis were apparently less satisfactory. In the Orient, both the Chinese and the Japanese crops were said to be of superior quality.

Rye, potato, and feed grain crops.—In Europe as a whole, rye and feed grain crops as well as wheat turned out unusually well in 1933–34. Indeed, many European countries (including Germany and Poland) harvested larger rye crops in 1933 than in any other recent year; and the countries of Europe ex-Russia, as a group, secured a record post-war outturn of that cereal (Table V). Barley and oats also made extraordinarily large crops in Europe in 1933, though these were less strikingly large than the two bread grain crops. A larger outturn of oats had been harvested only once before in the preceding decade, while significantly larger barley crops had been produced only twice before. The European corn crop was about average (1928–32) in size, with a poor outturn in Rumania about offset by somewhat larger than average outturns in the other Danube countries and in Italy. Of the major food and feed crops in Europe, the potato crop alone was relatively short in 1933; and even this crop was larger than any of its kind produced during the post-war years prior to 1929.

North American rye and feed grain crops, on the other hand, turned out poorly in 1933. In the United States, rye and oats made the smallest crops and corn and barley the third smallest crops in post-war years. In Canada, the rye crop was smaller than ever before in post-war years; only once before had the oats and corn crops been smaller; and only twice before had the barley crop been smaller.

The Argentine corn crop harvested in February–March 1934 was also notably short. Moreover, it followed a crop which, though larger, was still below average in size (Table V). Oats, like corn, made a small crop in Argentina in 1933–34; but the less important crops of barley and rye (particularly the former) were more satisfactory.

VISIBLE SUPPLIES IN 1933–34

Largely because of the small 1933 wheat crops in North America, “world” visible supplies were lower throughout most of 1933–34 than they had been in any of the three preceding years (Chart 4, p. 132). During the first two months of the season these supplies ruled at a higher level than in the same months of any previous year except 1931; but with general movement of the new crops, “world” visibles increased less rapidly than usual, primarily because of small North American marketings.

Two other features of “world” visibles are noteworthy: the unusual interruption in their upward course during November and early December, and their gradual decline from the winter peak. Primarily responsible for the reduction in these supplies in November was the early peak in North American visibles and the fact that the Southern Hemisphere crop movement was not correspondingly early. The seasonally small decline of world visible supplies during February–July—considerably the smallest in the seven years for which comparable data are available—chiefly reflected the extremely light movement of wheat to export from the four major exporting countries. In the United States, small exports were about offset by light marketings through early June (Table X); but Canadian exports were smaller without corresponding reduction of farm marketings as compared with most years, and in Australia farmers tended to hold their wheat at country stations (where it was reported as part of visible supplies) instead of exporting it freely at the prevailing prices.

The striking features of United States visible supplies in 1933–34 were the lower level, the early peak, and the unusually large increase during July. Not since 1928–29 had commercial stocks in the United States stood so low as during most of 1933–34. The reduced level and also the low early peak reflected, on the one hand, fair maintenance of mill demand, and, on the other hand, light farm marketings from a small crop. The sharp upturn in these visibles in July 1934 was the result of a significant increase in marketings in response to improved prices and an early harvest, of almost unprecedentedly

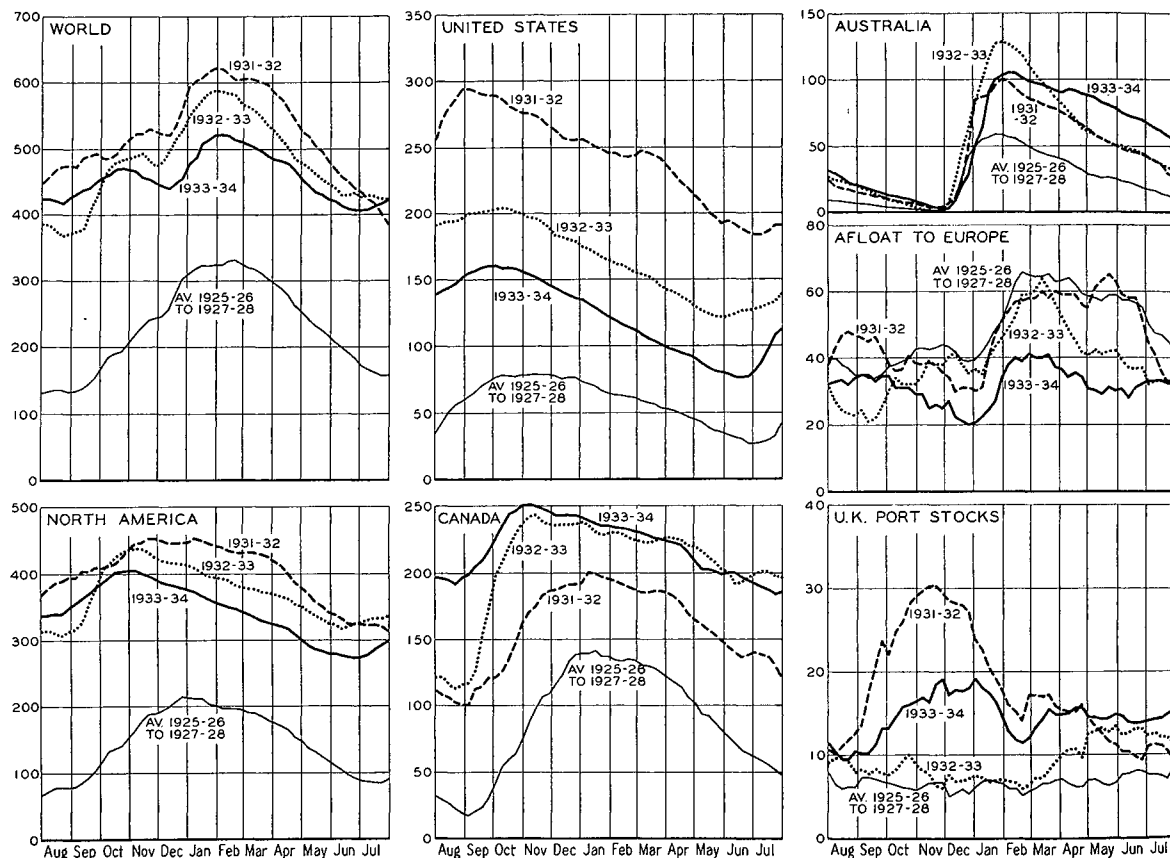
small exports, and of a mill demand which may have been restricted by the narrow spreads prevailing between near and distant wheat futures.

The course of the Canadian visible supply was peculiar in that there was only a small increase from the summer low to a peak which

ings, which was apparently directly associated with the course of Canadian wheat prices (Chart 11, p. 155), was an important element in determining the course of Canadian visible supplies.

The principal unusual feature of the Australian visible was the slow decline from the

CHART 4.—WHEAT VISIBLE SUPPLIES, WEEKLY, 1933-34, WITH COMPARISONS*
(Million bushels)



* Weekly data for the series summarized monthly in Table XI.

came earlier than usual and which was followed by an extremely slow and gradual decline. The small size of the Canadian crop, the way in which it was marketed (Table X), and the reduced demand for Canadian wheat exports were the principal factors responsible. In 1933-34 Canadian wheat marketings were exceptionally large in July-September (particularly so in the first two months), strikingly small in October-December, and relatively large again in the following April-July. The unusual course of these market-

relatively high peak of January-February. This reflected unwillingness on the part of Australian farmers and other wheat owners to sell wheat freely at the low level of prices prevailing, particularly in February-April. During May-July when prices were higher, the reduction in Australian visibles was about normal seasonally, though it was small in view of the record high post-war level of these supplies.

Argentine visible supplies (Table XI) were unprecedentedly large during December-

July 1933-34. To some extent this was due to the large Argentine wheat crop harvested at the beginning of that period. However, a crop of about equal size in 1927 and a substantially larger crop in 1928 were both associated with a lower level of visibles. Of primary importance as compared with these years were the substantially smaller exports in January-May 1933-34. In addition, the market-supporting system inaugurated by the Argentine government in December 1933 (p. 157) may have resulted in placing an unusually large proportion of Argentina's wheat supplies in visible positions.

Stocks in British ports were unusually large practically throughout 1933-34, apparently not so much because of pressure of large "orders" shipments as because British importers regarded the low wheat prices of September-May as good levels at which to maintain fairly heavy import stocks. In contrast, stocks afloat to Europe were notably light,¹ reflecting the low level of international trade. During August-November, the combined total of visibles afloat and in British ports was undoubtedly large in relation to the low level of import demand characteristic of the crop year.

YEAR-END STOCKS

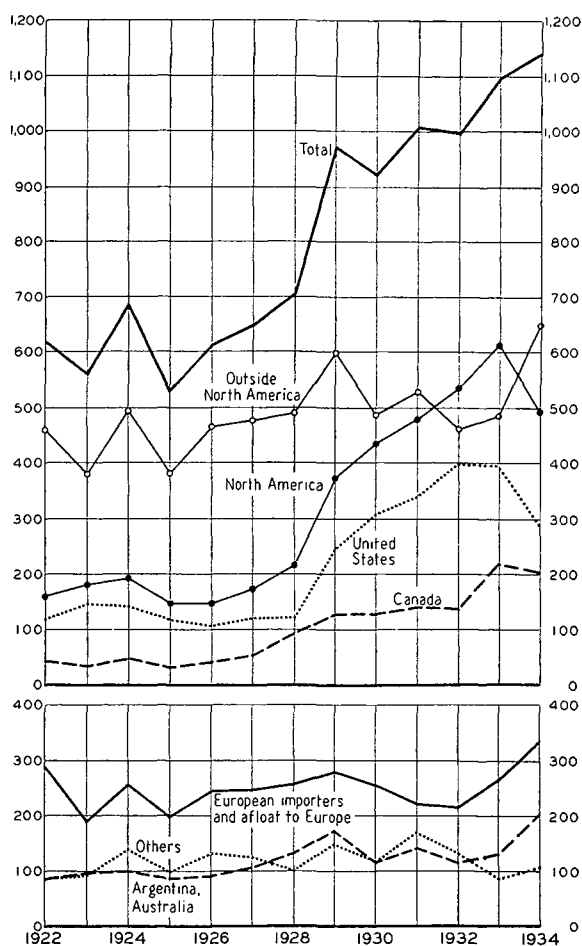
"World" visible supplies probably represented a smaller percentage of total stocks, ex-Russia, on August 1, 1934, than on the same date of any year since 1929. Although "world" visibles showed no change during the course of 1933-34, and at the end of that year were lower than the peak visibles of August 1931, "total world" stocks, ex-Russia, apparently stood at a new record high level about August 1, 1934.

In the fall of 1933, on the basis of crop estimates then generally accepted, it seemed reasonable to anticipate a substantial reduction in total stocks during the course of 1933-34. Even as late as May a small reduction appeared to be in prospect; but later revisions of crop estimates and the official and semi-official appraisals of carryover published for

several countries in July-September 1934 leave little doubt that "world" year-end stocks were unprecedentedly large about August 1, 1934. Increases in carryover in importing Europe, the Danube countries, Argentina, and Australia appear to have more than offset the large reduction in the United States and smaller reductions in Canada and northern Africa (Chart 5 and Table XII).

CHART 5.—WHEAT STOCKS IN VARIOUS COUNTRIES AND REGIONS ABOUT AUGUST 1, 1922-34*

(Million bushels)



* Data from Table XII.

We now appraise the net increase in total stocks at approximately 45 million bushels.

Stocks in countries outside of North America constituted a greater proportion of total stocks in 1934 than in any year since 1929, when the world wheat surplus first became an important problem. Not even in 1929 did

¹ On December 23, supplies on the ocean were reported slightly below 20 million bushels—a new post-war record low.

European importing countries share so largely in the total; and Australia's portion was clearly greater in 1934 than in any preceding year, at least since 1922.

Despite small net imports of wheat and probably somewhat the heaviest consumption in post-war years, European importing countries apparently built up wheat stocks during 1933-34 to a new record high level at the end of the crop year. The net increase, which we estimate (only a rough estimate is feasible) at almost 70 million bushels, was unevenly divided among the individual countries. Additions to stocks were strikingly large in France and Italy, and of good size in the British Isles, Germany, Czechoslovakia, and Poland. On the other hand, Spanish wheat stocks must have been greatly reduced, and small reductions apparently occurred in a number of other countries. On August 1, 1934, France, Czechoslovakia, Sweden, and Germany almost certainly held record post-war stocks of old-crop wheat; and, in addition, stocks were probably well above average size in the British Isles, Italy, Poland, Portugal, and Greece. Elsewhere in importing Europe wheat stocks were apparently moderate or low; and stocks afloat to Europe on August 1 were also low.

In the Danube basin, large crops and small exports resulted in substantial increase of year-end stocks, despite relatively heavy consumption. Nevertheless, the level of these stocks on August 1, 1934, was not significantly above the 1929-33 average.

Outside of Europe (including stocks afloat to Europe), August 1 stocks were definitely higher in 1934 than in 1933 only in Australia and Argentina. Australian stocks were the largest on record for that date, at least since 1922; and stocks in Argentina had been larger only once before (1929). Private holding of wheat was an important factor in Australia. In Argentina, governmental policy with respect to timing of wheat exports (p. 148) may have exerted influence, though in view of the large 1933 crop, and the limited export outlet, a high level of August 1 stocks was assured.

Reduction in North American stocks from the record high level on about August 1, 1933, principally reflected the striking decrease in

the United States carryover. Indeed, the Canadian carryover of July 31, 1934, was the largest on record except for that of 1933. Moreover, with the same exception, the 1934 carryover in Canada represented a larger proportion of total world stocks than any earlier Canadian carryover, at least since 1922. In spite of a small harvest in 1933, Canada did not draw heavily upon accumulated stocks in 1933-34: the reduction in stocks during the course of the year was less than 20 million bushels. A greater reduction probably would have been recorded if Winnipeg wheat prices had not been maintained so far above export parity in a number of months, though lowering of Canadian prices might have precipitated keener competition from other countries (particularly Argentina), which would have prevented significant enlargement of Canadian exports or further reduction of stocks.

Although the 1934 carryover in the United States was probably about 200 million bushels above a normal level, it was the smallest since 1929. A reduction of approximately 100 million bushels was brought about during July-June 1933-34. Early in the season a larger reduction seemed to be in prospect; but early official estimates of the 1933 crop were revised upward in January, and both feeding and exportation of United States wheat were lighter than had been anticipated early in the year.

On July 1, 1934, stocks of United States wheat were above normal in all positions except Canadian ports (Table XIII). They were most strikingly heavy in visible positions¹ and in city mills, relatively lightest in country mills and elevators. Farm stocks, which were notably large in relation to the size of the preceding crop, reflected the tendency, previously noted, for United States farmers to hold back their wheat, presumably in the hope of selling later at a higher level of prices. Data on the distribution of the United States carryover by classes of wheat (Table XV) indicate that only Pacific White wheat stocks were both absolutely and relatively large as

¹ July 1 visibles in the United States were in 1934 swelled more than usual by early receipts of new-crop wheat; but even in this year the amount of new-crop wheat included in the visible must have been small.

compared with the 1929-33 average. On the other hand, stocks of red spring and durum wheats were considerably smaller in absolute terms, and also in proportion to total stocks, than they had been in most of the five preceding years.

There is little reason to believe that wheat

stocks in Japan, India, Algeria, Morocco, Tunis, or afloat to ex-Europe were appreciably different on August 1, 1934, than on the same date in 1933. In Egypt, on the other hand, there was presumably reduction from a moderately high to a minimum level during the course of 1933-34.

II. WHEAT ADJUSTMENT IN THE UNITED STATES

The size and geographical distribution of wheat crops in 1933-34 were as usual of outstanding importance in determining developments in wheat trade, prices, and consumption; but government measures of various types were by no means unimportant. In general it may be said of 1933-34 that more governments, more laws and regulations, and larger governmental personnel were devoted to amelioration of the economic position of wheat producers within national boundaries than ever before. The movement of wheat and flour in domestic and international trade was conducted more under governmental supervision and less under individual initiative than in any year since war-time controls were abandoned. A systematic survey and appraisal of even the more important governmental measures and operations affecting wheat in 1933-34, country by country, is impossible in the limited space here available. We therefore confine attention mainly to two outstanding features of governmental wheat controls during the past crop year, the developments (a) under the "wheat adjustment plan" in the United States and (b) under the International Wheat Agreement. Neither of these subjects, however, can be accorded more than summary treatment here.

Governmental actions affecting wheat in the United States during 1933-34 took four directions: (1) reduction of wheat acreage or production; (2) imposition of a processing tax on wheat, the proceeds of which were used mainly as payments to farmers who chose to reduce wheat acreage; (3) facilitation of wheat and flour exports through regional subsidy and loans to China; and (4) governmental purchase and distribution of wheat and flour for relief purposes. In addition, limitation of the amount of wheat and

flour export was agreed to under the International Wheat Agreement.

These steps in "wheat adjustment" were mainly the expression of purely domestic policy, but in their specific formulation and execution were in some degree conditioned by the obligations assumed by the United States under the International Wheat Agreement. It is of course impossible to say if procedures would have been different in the absence of the Agreement. At most, however, it seems reasonable to suppose that subsidization of exports might have been extended to somewhat larger quantities and perhaps to other regions than the Pacific Northwest in the absence of the international obligation to limit exports; and that the percentage reduction of sown wheat acreage required of contracting farmers might have been somewhat higher in the absence of international agreement specifying 15 per cent as the contemplated reduction of wheat production (or its equivalent) in the four major exporting countries.

Little need be said of limitation of exports as a governmental activity. Under the actual circumstances, it never became necessary to set up governmental machinery designed specifically to check or restrain the flow of exports. Commercial exports were a mere trickle in 1933-34, not because direct governmental control of exports was exercised, but because Chicago prices were far above export parity throughout the year. No one can demonstrate how far outstanding governmental operations—direct purchases of wheat for relief, intervention that lessened possible pressure of the Pacific Northwest surplus on eastern markets, and action to curtail the wheat acreage sown for the crop of 1934—contributed toward maintenance of Chicago

prices above Liverpool. In our judgment, the net effect was slight on the average—not much if any over 5 cents per bushel and perhaps less.¹ The historical record shows clearly enough that, in years when international wheat prices are low and world export surpluses exceed import demand, the United States stands forth among the exporting countries as the one wherein curtailment of exports occurs. Hence it appears possible that United States wheat and flour exports in 1933-34 were no smaller than they would have been in the absence of governmental operations which presumably tended to influence the Chicago-Liverpool price spread. Indeed, the principal effect of governmental operations upon exports was probably to enlarge the year's total directly through subsidization, not to diminish it through indirect effects upon international price relationships.

Acreage reduction.—The main features of the "wheat adjustment plan" sponsored by the new national administration that took office on March 4, 1933, and having its legal basis in the Agricultural Adjustment Act approved May 12, were made public on June 16. The general policy was stated to contemplate reduction of wheat sowings by farmers in exchange for "benefit" (later commonly called "adjustment") payments; co-operation of the Agricultural Adjustment Administration with existing agencies to facilitate wheat exports; possibly, removal from the domestic market of wheat produced in excess of domestic requirements in 1933-34; and imposition of a processing tax on wheat for domestic consumption, the proceeds to be used mainly to pay the "benefits." Acreage reduction was made voluntary, not compulsory. It was made clear at the outset that payments would accrue only to those farmers who chose to make and fulfill acreage-reduction contracts; that farmers would be asked to bind themselves

to reduce their acreage sown for the crop of 1934 by not more than 20 per cent of the acreage each had sown in a "base period"; that contracting farmers would be called upon to sow a minimum acreage; that two-thirds of the total benefit would be paid as early as possible in the autumn; and that the maximum legal processing tax would be levied.

Not until August 28, when the International Wheat Agreement was concluded except for Argentina's delayed signature, was the precise amount of reduction of acreage to be required of contracting farmers announced. Typically, the reduction sought in sowings for the 1934 crop was 15 per cent from the average area sown by contracting farmers for the crops of 1930-32. Meanwhile an extensive educational campaign had been in progress, designed to acquaint farmers with both the main principles and the details of operations of the plan. In the course of this campaign, and up to September 25, farmers were invited to sign applications for contracts. Largely on the basis of information included in these applications, the contracts themselves were later written out and signed. The "sign-up campaign" which closed on September 25 (with some special exceptions) was reopened from February 26, 1934, to April 15 (May 16 in some states); but this secondary campaign was not pressed and had practically negligible results. Certain administrative rulings (December 1, 1933, and March 3, 1934) tended to permit contracting farmers in some regions to sow less wheat than was specified in the provisions of their contracts concerning minimum acreage.

Adjustment payments on the 1933 crop have been estimated as likely to total slightly under 100 million dollars, equivalent to over 35 per cent of the cash income of farmers from the 1933 wheat crop. To participating farmers, the payments were in two installments: the first, at the rate of 20 cents per bushel of allotment, began to be distributed on October 31, 1933, but was paid mainly in December-March following; the second, at the rate of 9 cents per bushel less local expenses of administration, began to be paid in August 1934, but only a little was distributed before decision was reached to com-

¹ An official appraisal, however, indicated broadly that United States prices would have been 10 to 15 cents per bushel lower in the absence of the wheat adjustment program. This implies that Chicago prices would have averaged above Liverpool prices, but not so far above them as the actual record shows. See *Agricultural Adjustment: A Report of Administration of the Agricultural Adjustment Act, May 1933 to February 1934* (Washington, 1934), pp. 230-31.

bine this second payment on the 1933 crop was the first payment on the 1934 crop, announced to begin early in October 1934.¹ Up to August 1, 1934, total payments (made by check) were 69.5 million dollars.

Enhancement of the income of participating wheat producers was undoubtedly the outstanding effect of the wheat adjustment plan as a whole. This benefit probably extended to about 40 per cent of the total number of wheat producers in the country, but the farms upon which acreage reduction was practiced probably covered somewhat over 75 per cent of the total wheat acreage sown in the country during the typical base period 1930-32.² In general, applications for contracts covered substantially larger proportions of the sown area of 1930-32 in states where wheat is one of the major enterprises in the farming system than where it is not³—that is, broadly, west of the Mississippi River. Another effect of considerable importance was that benefit payments accrued to many farmers who, on account of very poor wheat crops in 1934, might have obtained little or no income from wheat growing in 1933-34 in the absence of participation in the wheat adjustment plan. This effect is more important in retrospect than it was in prospect.

The effect of the acreage-reduction campaign upon the area sown for the wheat crop of 1934, the area harvested, or the crop itself cannot be measured precisely; for the outcome was determined only in part by the campaign. The campaign cannot unequivocally be characterized as successful or unsuccessful, for the objectives were not consistently stated in such a way as to render quantitative appraisal uncomplicated and clear. From the various official statements it is possible to conclude that the quantitative objective of the acreage-reduction campaign was either (a) to reduce the 1934 *sown* wheat area from 66.0 million

acres in 1930-32 or from 65.7 million acres in 1931-33 to 56.1 or 55.9 million acres; or (b) to reduce the 1934 *harvested* wheat area from 53.9 million acres in 1931-33 to about 47.5 million acres; or (c) to reduce the 1934 wheat crop to 624, 694, or 698 million bushels. The outcome, according to official statistics now standing but subject to revision, was (a) a sown wheat area of about 58.7 million acres for 1934; (b) a harvested wheat area of about 44.0 million acres; and (c) a crop of about 497 million bushels. The "planned" reduction in *sown* acreage did not eventuate; the "planned" reduction in *harvested* acreage occurred with a large margin to spare; and the "planned" reduction in production also occurred with a large margin to spare. But if abandonment (not subject to planning) of 1934 sown acreage had turned out about at the average of 12 per cent, and if also the yield per acre harvested (not subject to planning) had turned out equal to the 1924-33 average of 14.1 million bushels, the harvested area of 1934 would have approximated 51.7 million acres and the crop 730 million bushels—both figures being above the objectives stated in terms of harvested area and crop production. It is clear that achievement of such stated quantitative objectives as were achieved could not have occurred in the absence of unfavorable weather conditions for wheat, unless some further governmental measures had been brought to bear in the spring of 1934.

Whatever the precise quantitative objectives in the campaign for acreage reduction, a less precise general objective was to bring about more or less reduction of production through restricting the acreage sown. The results on sown acreage, viewed in the light of this general objective, were unquestionably substantial. As reported, the area sown for the crop of 1934 was the smallest in post-war years except 1924; and it was 7.8 million acres, just under 12 per cent, below the sown acreage of 1933. There appears to be no good reason for supposing that, in the absence of the acreage-reduction campaign, sown acreage for 1934 would have shown as large a reduction as was actually reported. Indeed, maintenance or near-maintenance rather than substantial

¹ AAA Press Release No. 868-35, October 1, 1934.

² Sherman Johnson, *Wheat under the Agricultural Adjustment Act* (Brookings Institution, Washington, D.C., June 1934), p. 86. This pamphlet, part of a "Concurrent Study of the Operation of the Agricultural Adjustment Act," gives in considerable detail the history of developments under the wheat adjustment plan up to June 1934.

³ *Ibid.*, p. 57.

reduction of sown acreage would probably have occurred; for the price position favored wheat plantings for the crop of 1934 more than for the crop of 1933 and so also did weather conditions with reference to winter wheat (though not to spring wheat, which is the smaller element of the total crop). Reduction of sown acreage by 12 per cent from the 1933 level was in considerable degree the result of governmental effort, not of natural forces or normal economic incentives. But natural forces were much more significant in affecting the harvested acreage and the crop outturn.

While the acreage-reduction campaign brought about practically a full 15 per cent reduction of acreage by participating farmers, it encouraged expansion of acreage among the non-participating. All told, the reduction of sown acreage sought under the adjustment plan seems to have fallen below official hopes and expectations—partly because not enough farmers chose to participate, and partly because non-participating farmers chose to expand their acreage. But the reduction achieved was nevertheless substantial and significant.

The processing tax and flour consumption. From July 9, 1933, a tax of 30 cents per bushel has been levied on wheat used for domestic food consumption, with certain exemptions; and as of this date the equivalent of this tax was imposed upon all flour stocks of wheat products in the hands of millers, wholesalers, and retailers (except retail stocks not in warehouses or on shelves and retail stocks disposed of within thirty days). The yield from the tax much more than sufficed for such adjustment payments to farmers as have been made thus far. Collections through July 1934 were 127.6 million dollars, including 13.6 million on flour stocks. From the outset millers feared and anticipated reduction of domestic flour consumption as a result of the processing tax.

From data now available for the crop year July-June 1933-34, it can be said with certainty that domestic wheat-flour consumption in 1933-34 was lower than in 1932-33, but also that the extent of decline appears to have been less than many millers feared. It is not yet possible either to measure the extent of

the decline precisely or to ascertain how much of the decline resulted from imposition of the processing tax and how much from other influences.

The following tabulation, in million barrels, shows two appraisals of net flour *retention* in the United States by crop years since 1928-29—our own and that of the United States Department of Agriculture:¹

July-June	F.R.I.	U.S.D.A.
1928-29	110.0	110.4
1929-30	108.8	109.3
1930-31	105.3	107.2
1931-32	104.5	107.8
1932-33	106.0	110.7
1933-34	96.6	102.7

Retention represents estimated total production minus net exports and shipments to possessions; it does not represent *consumption* unless changes in flour stocks can be shown to have been negligible.

A number of developments have rendered the estimation of total flour production during the last few years more uncertain than formerly. The output of custom mills and of very small merchant mills has undoubtedly increased, but by an indeterminate amount. Census data on the output of these mills are lacking, and private estimates differ widely. Appraisal of the probable total output of other mills has been rendered more difficult by changes in the percentages of total output accounted for by mills in different size classes, by a presumption that has been raised that monthly milling reports to the Bureau of the Census have become less complete than formerly, and by changes in the amount of "prepared flour" output included in the biennial census totals for all wheat flour.

In consequence of changes for which our estimating method makes no allowance, or inadequate allowance, our estimates have come to run somewhat too low—in our judgment, perhaps 2 or 3 per cent too low. The

¹ Derived from data on production in *World Wheat Prospects*, September 27, 1934, pp. 11-17; for the official method of estimating production, see also *ibid.*, March 27, 1934, pp. 12-25.

Still another set of estimates has been presented by Martin E. Newell, "How the Processing Tax Lowers Flour Consumption," *Northwestern Miller*, October 31, 1934, pp. 277, 296-97.

basis for revision of the estimates is as yet so uncertain, however, that we have considered it as well to continue the estimates on the old basis and make allowance for a small but uncertain underestimation. The United States Department of Agriculture, on the other hand, has chosen to try to take account of the new factors in the situation and has raised its estimates accordingly. The Department estimates appear to us probably somewhat too high, however. In consequence, we judge the two sets of retention figures given above, based on these production estimates, to indicate limits of a range within which the actual retention lies.

The two sets of estimates are in close agreement as regards the direction and amount of change in flour retention between 1932-33 and 1933-34. Both indicate a substantial decline in flour retention. Based on our estimates of production, the decline amounted to 9.4 million barrels; and based on the Department of Agriculture estimates of production, the decline amounted to 8.0 million barrels.

The decline in consumption between these two years, however, was unquestionably smaller than the decline in retention; for stocks of flour were built up during 1932-33 but reduced during 1933-34. Accurate measurement of the increase of stocks during 1932-33 and their reduction during 1933-34 is not possible. We have previously expressed the opinion that the increase of flour stocks during 1932-33 amounted to about 4 million barrels, though it may have been larger.¹ This figure still appears to be a reasonable one.² Roughly, the reduction of flour stocks during 1933-34 may be taken as 2 to 3 million barrels, possibly somewhat more.³

On the supposition that flour stocks were increased 4 million barrels in 1932-33 and were reduced 2 to 3 million barrels in 1933-34, and also on the supposition that our estimates of retention run roughly 2 million barrels too low in 1932-33 and 2.5 million

too low in 1933-34, flour consumption, according to our method of calculation, approximated 104.0 million barrels in 1932-33 and 102.1 or 101.1 million in 1933-34—a decline of 1.8 to 2.8 per cent. On the same supposition concerning reduction of flour stocks, the official data on flour retention result in estimates of flour consumption of 106.7 million barrels in 1932-33 and 105.7 or 104.7 million in 1933-34—a decline of .9 to 1.9 per cent. There appears to be only a slender basis for accepting any one of these measures of decline as the most accurate; but in our opinion the true measure lies between 2 and 3 per cent rather than between 1 and 2 per cent.⁴ In any event the decline in flour consumption can hardly have been as large as 4 per cent; and in any event the decline proved smaller than was commonly anticipated early in the crop year, when some trade estimates of probable decline ran up to or above 10 per cent. But the continuing decline remains significant.

The burden of the processing tax on wheat is a case of the general theory of incidence. If one regards such a tax as always distributed between producer and consumer, it follows that to some extent the processing tax on wheat results in a lower farm price of wheat and in a higher consumers' price of flour. The exact position of the division in the incidence of a burden will vary from case to case. It seems to us clear that in the case of the processing tax on wheat the burden has been borne to a preponderating extent by consumers; and we take it that the retail price of flour includes most of the processing tax of 30 cents a bushel on wheat plus the mark-up of the trades. Most flour is sold to a wholesaler and then to a retailer, so that there are two mark-ups, usually on a percentage basis. If this interpretation be correct, the price of flour is significantly higher in relation to prices of competing cereal products than it would be in the absence of the processing tax on wheat.

To what extent the decline of 2 to 3 per cent in domestic flour consumption between 1932-33 and 1933-34 resulted from imposition of the processing tax cannot be ascertained. Decline in total consumption appears to have been in progress since 1929-30, attributable

¹ See *WHEAT STUDIES*, December 1933, X, 86.

² Newell, however, calculates the increase at 3 million barrels.

³ Newell's estimate of reduction is 3 million barrels.

⁴ Newell's estimate of the reduction in consumption is 2.2 per cent.

probably to decline in wastage of bread, reduced ingestion of bread in sandwiches, and reduced ingestion of sweet baked goods; possibly also to displacement of bread in the national diet by meat and vegetables. Perhaps the continued operation of some of these influences accounts fully for the 2-3 per cent decline in flour consumption between 1932-33 and 1933-34. Yet it seems possible, with increase in national business activity and freer relief expenditures, that such influences may have ceased to operate in 1933-34; and consequently that the processing tax was fully responsible for the decline of flour consumption, and may indeed have prevented flour consumption in 1933-34 from rising to a level higher than in 1932-33.

The export subsidy.—It is unnecessary here to describe in detail the operations or to appraise the results of the export subsidy applied to wheat exports from the Pacific Northwest during 1933-34 under the North Pacific Emergency Export Association; these have been considered in an earlier issue of *WHEAT STUDIES*.¹ Purchases by the Association began October 19, 1933; sales on October 31. Up to June 30, 1934, purchases were 27.2 million bushels, sales 26.5 million, and shipments 22.6 million. These shipments constituted about 57 per cent of the country's gross exports and shipments to possessions in July-June 1933-34, and about 80 per cent of the net exports and shipments. The subsidy cost of the sales was about 6 million dollars (nearly 23 cents per bushel), derived from receipts under the processing tax. Early forecasts of probable sales were 35 million bushels, and of costs, 7 to 8 million dollars. Chinese governmental purchases, financed through a credit of 10 million dollars established by the Reconstruction Finance Corporation on June 5, 1933, were a dominant fraction of the wheat sales but not of the flour sales; the sales to

China under the loan were made at a price 5 cents per bushel higher than other sales. Sales to the Orient constituted over 76 per cent of the total wheat sales, and over 67 per cent of the flour sales.

The major effects of the operation were to enhance returns to farmers in the Pacific Northwest through enhancement of farm and market prices; to enlarge regional exports but to reduce regional shipments to the eastern part of the country; and to reduce the regional carryover but also the regional use for feed. The net price-raising effect on the regional weighted average price for the year as a whole seems to us not to have exceeded 6 cents per bushel; and we doubt if the average farm or market price east of the Rockies was significantly affected by the tendency of the export operations to lessen the competition of Pacific Northwest wheat and flour in that area. Few acts of "government interference" have won so nearly unanimous approval and excited so little attack. In our view, however, the advantage to wheat growers in the Pacific Northwest has been commonly exaggerated, and the favorable effects on prices to growers in the rest of the United States have been even more substantially overstated.

Purchases for relief purposes.—Little information is available concerning governmental purchases of wheat for relief purposes. Their magnitude is indicated roughly by the fact that, from October 1933 through May 1934, about 11.4 million bushels had been distributed or ordered to be distributed by the Federal Surplus Relief Corporation, about 8.2 million bushels for livestock feed.² We infer that most of the purchases occurred before the end of December 1933, so timed as to support a weak market in mid-October and mid-December. Trade reports contain no reference to supporting purchases on the break of prices in mid-April 1934 or in June 1934. The outstanding net effect upon the domestic wheat situation was probably somewhat to enlarge the use of wheat for feed for the crop year as a whole; the quantities involved were presumably too small to exert more than a very slight effect upon the average level of prices.

Summary of effects.—Regarded as a whole, operations under the wheat adjustment plan

¹ Joseph S. Davis, "Pacific Northwest Wheat Problems and the Export Subsidy," August 1934, Vol. X, No. 10.

² *Monthly Report of the Federal Emergency Relief Administration*, May 1 through May 31, 1934, pp. 51-53. The purchases were made by the Farmers National Grain Corporation for account of the Federal Surplus Relief Corporation with funds supplied by the Federal Emergency Relief Administration.

during 1933-34 had as their outstanding effect enhancement of the income of wheat producers. The greatest gain was to participating farmers in the Pacific Northwest, with diminishing advantages to other participating farmers, to non-participating farmers in the Pacific Northwest, and to other non-participating farmers. The gains to wheat farmers were at the expense of consumers. The direction of price effect was toward enhancement, but the amount of enhancement is easily exaggerated. Flour consumption was adversely affected, but not in large degree. Seed use of wheat was reduced because of induced reduction in acreage sown for the 1934 crop. Reduction of sown acreage attributable to the plan was substantial but below hopes and expectations. Exports were enlarged through the

export subsidy rather than reduced through the effects of the plan as a whole on international price relationships. The outward carryover was probably not materially different from what it otherwise would have been; for it seems likely that factors tending to enlarge the carryover (reduced flour consumption, reduced feed use due to enhanced prices, and reduced seed use) were quantitatively of about the same importance as factors tending to reduce the carryover (subsidized exports and distribution of wheat for feed use). More remotely, the supply position of 1934-35 was slightly improved by the campaign for acreage reduction; but the accident of a low yield per acre in 1934 greatly overshadowed improvement attributable specifically to planned reduction of wheat acreage.

III. THE INTERNATIONAL WHEAT AGREEMENT

What is commonly called the "International Wheat Agreement" of 1933 appears to comprise four more or less distinguishable elements.

1. A "Conference of Wheat Exporting and Importing Countries: Final Act signed at London, August 25th, 1933, with Appendices and Minutes of Final Meeting." This Act, published by the League of Nations on September 21, was signed by representatives of the four major overseas exporting countries; by representatives of European exporting countries (Bulgaria, Hungary, Rumania, the USSR, and Yugoslavia); and also by representatives of certain European countries falling within the classification of importing countries (Germany, Austria, Belgium, Spain, France, Greece, Irish Free State, Italy, Poland, the United Kingdom, Sweden, Switzerland, and Czechoslovakia). Of this last group of countries, Spain and Poland have been net exporters about as often as net importers in the past decade; and Germany also was a net exporter in 1933-34. Three countries—Irish Free State, Sweden, and Czechoslovakia—signed *ad referendum*. The Irish Free State did not ratify this signature, and hence is not a party to the Agreement. The Final Act specified 560 million bushels as the "world import demand" in 1933-34, which was to be par-

tioned among the exporting countries party to the Agreement, with allowance for non-participating exporting countries. It contained also a highly generalized statement of the obligations of importing countries, and provided for establishment of a Wheat Advisory Committee "to watch over the working and application of the agreements"

2. A "Note of Agreement between the Overseas Wheat Exporting Countries," published (so far as we are aware) only by the United States Department of State in *Treaty Information Bulletin No. 48*, September 30, 1933, but not authenticated. This Note of Agreement was initialed by representatives of Canada, the United States, Argentina, and Australia. Over the initials of these representatives appears the sentence: "This is the Agreement of 30th June, 1933." Other evidence indicates that no such agreement was accepted as early as June 30, and we infer that it was not initialed until it was supplemented by the Addendum discussed below. It included the statement: "The basis of any plan agreed to between the overseas exporting countries is to bring about an adjustment of production so as to allow of the liquidation of existing surplus stocks within a period of two years." It specified that each country agreed "to bring about a reduction of production of wheat to

the extent of 15%," the reduction applying to the crop of 1934. Tentative export quotas for 1933-34 and 1934-35 were specified in this Note of Agreement.

3. An Addendum to the Note of Agreement, published (so far as we are aware) only by the United States Department of State in *Treaty Information Bulletin No. 48*, but not authenticated. This Addendum as published bears no title, no date, and no indication of signatures or initials. We infer that it was initialed by representatives of Canada, the United States, Argentina, and Australia on August 30, 1933. It was devoted solely to specification of export quotas for the four major exporting countries, and included no reference to reduction of production.

4. A mass of unpublished communications between governments party to either the Note, the Act, or the Addendum, delimiting and placing interpretations upon the commitments of nations under one or the other; and a series of unpublished minutes of meetings of the Wheat Advisory Committee, with reports of subcommittees.

Unless and until these communications and discussions are made public, it will not be feasible to undertake a careful and precise statement of the content of the International Wheat Agreement, or an accurate appraisal of results. The following paragraphs are to be regarded merely as a tentative brief summary.

The general objectives of the Agreement, as stated in the Final Act, are "to adjust the supply of wheat to effective world demand and eliminate the abnormal surpluses which have been depressing the wheat market and to bring about a rise and stabilization of prices at a level remunerative to the farmers and fair to the consumers of breadstuffs."

The general methods whereby these objectives were to be achieved were approximately as follows: (1) The four major exporting countries and the four wheat-exporting countries of the Danube basin were to limit their exports in 1933-34,¹ thereby limiting the supply readily available to importers, in the attempt to compel importers to bid up the international wheat price. (2) These exporting countries were also to limit their exports in 1934-35,

in part by keeping down the amount of wheat produced domestically in 1934; this would tend to support the international wheat price and to reduce surplus stocks. (3) Whether or not a rise in wheat prices should be induced, the importing countries were "not to encourage any extension of the area sown to wheat and not to take any governmental measures, the effect of which would be to increase the domestic production of wheat"; also "to adopt every possible measure to increase the consumption of wheat"; and to be "prepared to bring about the progressive removal of measures which tend to lower the quality of breadstuffs and thereby decrease the human consumption of wheat." (4) After wheat prices had been caused to rise to an average level of 63.02 gold cents per bushel (imported British parcels, duty-free), maintained for sixteen weeks, the importing countries were to begin to lower customs barriers and to modify "the general régime of quantitative restriction of wheat imports."

No one, so far as we are aware, has contended that the Agreement was an unqualified success or even that the major objectives were achieved. The most comprehensive claim that can be made for the Agreement is perhaps that it represented another formal expression of an international consensus of opinion that progressive erection of barriers to trade in wheat among other commodities ought to cease in the interest of all nations. Less comprehensive claims susceptible of plausible defense are that the Agreement tended somewhat to support international prices in 1933-34, by holding in check potential export pressure, by helping to prevent further upbuilding of barriers to wheat imports and further expansion of wheat acreage in European countries, and by helping to promote acreage reduction overseas; and that, as a result of its effects upon acreage sown for the crop of 1934, the Agreement held the wheat surplus of 1934-35 to a level somewhat lower than it would have been in the absence of the Agreement.

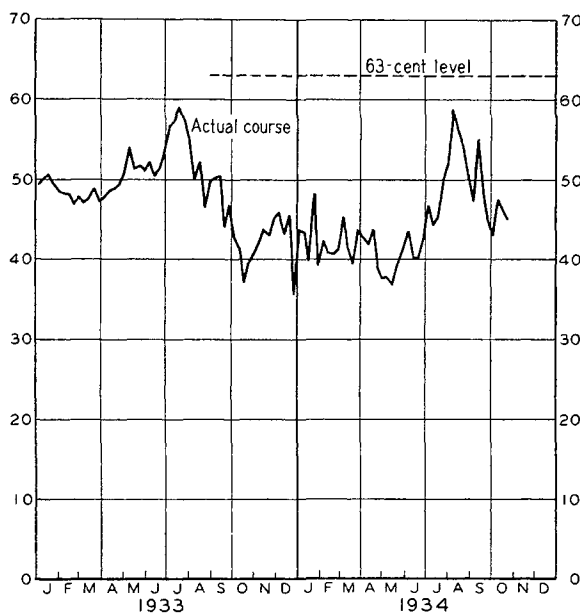
¹ The USSR agreed only to limit 1933-34 exports "to a figure which will be arrived at upon completion of negotiations with the Governments of the overseas wheat exporting countries"; and to negotiate further concerning 1934-35 exports. No agreement was reached on a quota for the USSR for 1933-34.

But beyond question there was no important relaxation of import restrictions in 1933-34.¹ Moreover, the total volume of trade was obviously determined mainly by import requirements, not by control of exports. The international wheat price, far from rising and being held at a level of 63 gold cents or more, tended to fall after the Agreement was concluded, and averaged no more than 43 cents in any sixteen consecutive weeks between September 1933 and July 1934 (Chart 6). Quite clearly the Agreement exerted no important influence in the direction of enlarging wheat consumption.² Such net reductions of wheat acreage³ as occurred in Europe (apparently between 1 and 1.5 million acres) came mainly in France, Germany, Italy, and Rumania, and they must be attributed very largely either to weather conditions or to purely domestic policies toward wheat. The substantial reduction of sown acreage in the four overseas exporting countries between 1933 and 1934 (now measured at 13 million acres, about 10 per cent) likewise resulted largely from unfavorable weather conditions (as in Argentina and Canada), normal economic motives (as in Australia, where relatively high wool and meat prices as well as a dry sowing season kept land out of wheat), or purely domestic policies (as in the United States). Argentina admittedly exported more than her allotted quota in 1933-34. An attempt to extend the scope of the Agreement to include fixation of

international prices failed when, in May 1934, Argentina refused to participate, with the tacit support of British opinion.

Consequently, although it is reasonable to concede that the Agreement may have exerted some influence upon prices (mostly against

CHART 6.—BRITISH PARCELS PRICES, WEEKLY FROM JANUARY 1933 RELATIVE TO LEVEL CONTEMPLATED UNDER THE WHEAT AGREEMENT*
(U.S. pre-devaluation gold cents per bushel)



* See Table XXXIII.

further decline), upon trade, and upon consumption in 1933-34, the extent of influence must be characterized as slight or even negligible. Much less was accomplished than was hoped and (by some) expected. Instead of proving a dominant influence on world wheat prices, the Agreement was at most a subsidiary and relatively unimportant influence.

Explanation of the failure to lift prices could be sought in several directions. It might be contended that the Agreement was inherently defective because it included no machinery for dealing with regional surpluses that might arise from exceptional yields per acre of crops harvested after August 1933; that it failed to provide for a tribunal of appeal and adjustment; that any international agreement unaccompanied by sanctions is unworkable; that the Agreement was so loosely drawn that

¹ Import restrictions in 1933-34 are considered briefly in connection with reported imports; see below, pp. 166-71.

² No exporting country, and only one importing country (France), adopted the more obvious methods of expanding wheat consumption—denaturing wheat grain and regulating the milling extraction so as to reduce the amount of flour obtained from a given weight of wheat. How far the steps taken in France resulted from commitments under the International Wheat Agreement is uncertain; but it is undeniable that France in 1933-34 labored under a domestic wheat surplus in which such steps had a logical place.

³ We do not propose in this study to examine the evidence concerning the extent to which reduction of wheat acreage and production in 1934 can properly be attributed to commitments under the International Wheat Agreement. This subject cannot be considered until fuller information is available concerning 1934 crops and acreage and concerning interpretations of clauses in the Agreement bearing on reduction of acreage or production.

the specific obligations of adherent nations were never ascertainable; that in general the participating governments sought to deny or evade the spirit of the compact, and the letter also so far as interpretations of clauses could be rendered doubtful in national self-interest; and so on in a chain of recrimination. In retrospect and without adverse reflections upon the intentions of national delegates and governments, it seems fairly clear that failure was due in the first instance to an erroneous and unduly rigid forecast of the relation between import demand and export surpluses for 1933-34; and in the second place to the unfolding of circumstances which placed an unduly heavy relative burden upon the government of Argentina. In a large degree the forecast of the world statistical position proved erroneous and the burden on the Argentine government unduly heavy because the wheat crops of 1933 turned out to be much larger than was indicated by estimates and forecasts current late in August 1933.

The summary relationship of August-July net exports reported in 1933-34 to quotas established under the International Wheat Agreement is as follows, in million bushels:

Country	Quotas	Net exports
United States	47 ^a	26 ^a
Canada	200	194
Argentina	110	147
Australia	105	86
Danube ^b	50 ^c	35 ^d
USSR ^e }	48 ^f	{ 34
Others ^g }		{ 28 ^h
Total	560 ⁱ	550

^a Not including shipments to possessions (2.7 million bushels in 1933-34); apparently the quota was defined to refer strictly to net exports.

^b Hungary, Yugoslavia, Rumania, Bulgaria.

^c More accurately, 50-54 million bushels. Available information does not include a description of the manner in which the total quota was eventually partitioned among the four Danube countries.

^d Hungary, 29.32 million bushels; Yugoslavia, 1.05 million; Rumania, .25 million; Bulgaria, 4.49 million.

^e No quota fixed under the Agreement.

^f Derived by subtraction of preceding quotas from total "import demand"; more accurately, 44-48 million bushels; not definitely a quota allocated to or accepted by any country.

^g Countries not specified in the Agreement.

^h Algeria, 12.15 million bushels; Morocco, 7.91 million; Germany, 5.40 million; Poland, 2.49 million; Spain, .08 million; India, .41 million.

ⁱ "World import demand" assumed under the Agreement; presumably regarded as prospective *minimum* import demand; presumably regarded as prospective demand for exports from all net-exporting countries.

The reported net exports are discussed below (pp. 171-74). Here it suffices to point out (1) that the reported total fell below anticipations under the Agreement as formulated in August 1933, probably by more than the deficiency of 10 million bushels indicated in the tabulation, since the prospective "world import demand" was presumably 560 million bushels at a minimum; (2) that reported exports fell below the definitely allocated quotas except as regards Argentina; (3) that this outcome clearly did not involve governmental restraint of exports in the United States, Australia, or the Danube countries; (4) that it is not possible to ascertain whether or not the government-sponsored dealing in Winnipeg futures was designed to hold Canadian exports within the quota limit as well as to support the relative level of Canadian wheat prices; and (5) that the reported exports of Russia and "other countries" exceeded the quantity anticipated (but not allocated) under the Agreement.

The world statistical position envisaged in the Agreement was roughly as follows.

For 1933-34, "world import demand" was assumed to be 560 million bushels. The precise meaning of this term was not and is not clear; but the necessary assumption was that importers would purchase *at least* 560 million bushels from *all* net-exporting countries, even if prices should rise. Broomhall's current forecast of import purchases was 552 million bushels measured in terms of overseas shipments, and net exports always exceed these shipments; and our own forecast published in late September 1933 was for net exports of about 575 million bushels.

Given the crop estimates and forecasts standing in August 1933, imports of 560 million bushels did not postulate increase of wheat consumption in importing countries in 1933-34. Neither did such imports postulate increase or maintenance of year-end stocks in importing countries, but allowed for some reduction. So far as concerns European importing countries, the forecast of world demand at 560 million bushels could be justified by a survey, country by country, of probable imports as determined by reference to existing old-crop stocks, forecasts of new crops,

existing import barriers, and trends in consumption.

Less subject to appraisal in the light of past experience was the theory implicit in the Agreement that, given import demand of at least 560 million bushels, prices could be forced up by control of the quantities released for export. There was, of course, no question that aggregate exportable surpluses much exceeded 560 million bushels. But there was a reasonable possibility that, if the four major exporters should agree to limit their exports to 462 million bushels, a situation would arise in which importers would eventually find difficulty in filling their requirements. The importing countries, assumed to need 98 million bushels from smaller exporting countries, might well be unable to obtain this quantity: there was no good reason to suppose that India, Germany, or Poland would export net (as in fact they did), or that the northern African countries, the Danube exporters, and Russia together would have as much as 98 million bushels available for export. Hence there was reason to expect that importers would at some time be forced to call upon the "big four" for exports larger than the agreed quotas. The emergence of a "sellers' market" and of rising prices seemed by no means out of the question—though it was not assured—on the basis of information current near the end of August 1933, if export limitation should be practiced by the "big four."

The general statistical set-up for the four major exporting countries as it appeared late in August 1933 is shown in the tabulation at the top of the next column, in million bushels.

This statistical position, as envisaged in August 1933, did not seem to involve unduly heavy burdens upon the government of any of the four major exporting countries. The United States government, indeed, faced practically no possibility of needing to set up or operate machinery to hold exports within the quota limits. With larger total supplies in 1932-33 than in 1933-34, the net exports of 1932-33 (including shipments to possessions) had reached only 33 million bushels, and could hardly be expected to prove larger in 1933-34 unless Chicago prices fell in relation to Liver-

Country	Initial stocks ^a	Prob-able 1933 crop ^b	Prob-able total supply ^c	Prob-able domestic requirements ^d	Sur-plus ^e	Export quota ^f	"Planned" year-end stocks ^g
United States..	386	500	886	610	276	47	229
Canada..	212	300	512	117	395	200	195
Argentina	75	200	275	90	185	110	75
Australia	65	150	215	50	165	105	60
Total..	738	1,150	1,888	867	1,021	462	559

^a Official estimates for the United States and Canada available at the end of August 1933; our estimates for Argentina and Australia.

^b Official forecast for the United States as of August 1, 1933; for Canada, probable crop as given in Addendum to "Note of Agreement"; for Argentina and Australia, our approximation to expectations current near the end of August 1933.

^c Summation of initial stocks and probable crops.

^d As specified in "Note of Agreement."

^e For export and carryover; probable total supply less domestic requirements.

^f As specified in Addendum to "Note of Agreement."

^g Surplus minus export quota.

pool prices—and this development itself seemed distinctly improbable with a domestic crop as small as that of 1933. The Canadian government already possessed machinery for control of exports through control of prices under government-sponsored dealings in wheat futures conducted by John I. MacFarland; and the crop of 1933, then being harvested, was known to be so small that more or less reduction of carryover was assured under limitation of 1933-34 exports to 200 million bushels. The Australian government, if the crop of 1933 did not exceed 150 million bushels, could count upon a small reduction of carryover while agreeing to export no more than 105 million bushels, and at the most need not expect on August 1, 1934, itself to hold or to cause Australians to hold a quantity of wheat more than 20-30 million bushels above "normal" stocks. Governmental machinery to control exports might be needed; but not high-powered machinery. The Argentine government, if the crop of 1933 did not exceed 200 million bushels, could expect that the full surplus would be exported under a quota of 110 million bushels, and that stocks would be only of "normal" size on August 1, 1934. Governmental machinery to restrain exports might not be needed at all.

In October 1933, legislation was passed in Australia whereby exports could be controlled

if the occasion should arise. Official permits to export could be required, with assignment of definite export quotas to individual exporters in proportion to their exports in earlier years and in exchange for the agreement of exporters to buy and hold one bushel of wheat for every two bushels exported, so long as farmers marketed freely. So far as we are aware, export licensing never was practiced in Australia. In November 1933, a Grain Control Board was established in Argentina, and empowered to fix minimum prices and apparently also to control exports by methods not specified. The Grain Control Board in Argentina was later concerned chiefly with purchase of wheat at the minimum prices and with disposition of the stocks so accumulated, not with direct control of exports. The disposition of accumulated stocks, however, necessarily included a potential indirect governmental control over the quantities exported. Canadian control of exports continued throughout the crop year to be exercised only through government-sponsored dealings in wheat futures, the details of which are not of public record; legislation passed late in the crop year provided a more direct method of export control, but this method was not utilized. Governmental restraint of United States exports was merely incidental and indirect.

As the weeks passed after conclusion of the agreements, it became increasingly clear that successful price-raising operations were being jeopardized on practically all sides. In the first place, import demand was weaker than had earlier seemed probable. Little by little the forecasts of the 1933 wheat crops in importing Europe were revised upward from a figure of about 1,220 million bushels, circulated late in August,¹ to about 1,333 million in mid-January 1934; hence prospective import requirements were shrinking. The actual movement of wheat and flour in international trade during September-December 1933, failing as it did after mid-September to show the usual seasonal increase (Chart 15, p. 165), suggested more and more strongly that the anticipated volume of trade for the year might not be attained, especially because throughout September-December stocks of import wheat were piling up in British ports (Chart 4, p.

132). With the changes in crop estimates, it became more and more probable that importing countries would not be able both to absorb 560 million bushels and to reduce their surplus stocks.² Apparently no workable plans were laid in the Agreement for reducing export quotas in the event that import demand should fall below anticipations; and 560 million bushels continued to be the import demand assumed under the Agreement throughout the crop year.

In the second place, crop forecasts for some of the major exporting countries were also revised upward. The position of the major exporting countries in mid-January 1934, after these changes in crop forecasts, was about as summarized in the following tabulation, in million bushels:

Country	Initial stocks	Crop of 1933	Total supply	Domestic requirements	Surplus	Export quota	Prospective year-end stocks
United States..	386	527	913	610	303	47	256
Canada..	212	272	484	117	367	200	167
Argentina	75	256	331	90	241	110	131
Australia	60	160	220	50	170	105	65
Total..	733	1,215	1,948	867	1,081	462	619

The United States, Argentina, and Australia then appeared to have larger surpluses than were earlier anticipated, and were accordingly obliged to envisage a more unfavorable level of year-end stocks if the export quotas should remain unchanged. Canada's position, however, seemed more favorable in January than it had in August. The change in the United States position was not significant in its bearing upon the problem of holding exports within quota limits through governmental action, because the events of September-December had shown that commercial exports were being sufficiently restrained by high domestic prices without governmental

¹ This was the forecast of the U.S. Department of Agriculture, published in *World Wheat Prospects*, August 26, 1933. Broomhall's forecast, published in *Corn Trade News*, August 23, 1933, was 1,242 million bushels.

² That the volume of trade (excluding United States shipments to possessions) eventually proved to be as much as 550 million bushels was due to an unanticipated increase in import demand toward the end of the crop year, itself due to unfavorable development of the crop of 1934; see below, p. 163.

control. But the Australian and Argentine governments, once the size of the 1933 crops was known to exceed the August forecasts, faced disturbing alternatives of allowing exports to exceed the quotas, or of sponsoring accumulation of tremendously large stocks at the end of the crop year. With subsequent reappraisals of 1933 crops,¹ the Australian government faced the prospect of exceeding the quota or of sponsoring accumulation of stocks of about 80 million bushels (around 40-50 million bushels above "normal"); and the Argentine alternative was to exceed the quota or to sponsor accumulation of stocks of about 160 million bushels (some 80-90 million bushels above "normal," and undoubtedly the highest on record).

The Australian dilemma, as it happened, never constituted a pressing governmental problem. A strong tendency developed among Australian farmers to retain ownership of their new-crop wheat, with the result that normal pressure to export never threatened to bring exports above the quota. Consequently governmental restraint of exports was unnecessary, and the huge year-end stocks accumulated by August 1, 1934, were not a direct and palpably governmental responsibility.

The problem of the Argentine government, on the other hand, was not simplified by the unfolding of events unforeseen in August 1933. Quite clearly it was necessary in the early months of 1934 for Argentine officials either to ask for and secure enlargement of the 1933-34 export quota or to devise methods of restraining the flow of wheat to export which would eventually be drastic and expensive because of the large quantity of wheat involved. Such methods would inevitably have been far more burdensome on the Argentine government than any export-restraining devices in operation in the other three major exporting countries.

Briefly stated, developments in the first six months of 1934 were as follows. Argentina requested enlargement of her 1933-34 export quota (enlargement that on paper would pre-

sumably be at the expense of the Canadian, American, and/or Australian quotas). Earlier, a movement had begun in discussions of the Wheat Advisory Committee to expand the scope of the Agreement to include closer control of exports and fixation of minimum levels for international wheat prices, with predetermined differentials between grades and types. Discussion of this project, which had been formulated at least as early as January, was an outstanding feature of meetings of the Wheat Advisory Committee held in Rome on April 5-17, 1934, and in London on May 7-11. Whether on principle or because the Argentine attempt to obtain enlargement of the export quota had been unsuccessful, the Argentine delegate to the Wheat Advisory Committee on May 11 expressed the unwillingness of the Argentine government to participate in the plan to fix minimum international prices. A meeting of the Wheat Advisory Committee scheduled for June 27, at which alternative plans to fix prices were to be discussed, was not held. By about the second week in June, Argentine shipments had exceeded the 1933-34 export quota, attempts to enlarge the quota continuing unsuccessful. On July 18, the Argentine government issued a statement explaining and justifying its position.

The available documentary background concerning the negotiations between the governments of the four major exporting countries is far too inadequate to permit at this time an analysis of the Argentine official justification of its actions with reference to the International Wheat Agreement. In that justification, however, the relatively unfavorable position of Argentina resulting from the accident of an unexpectedly large 1933 crop plays a prominent part; and beyond question the relatively unfavorable supply situation of Argentina was factual. Argentina also stood in dire need of foreign exchange, obtainable only through exports. With Argentine refusal to restrain exports within quota limits, the Agreement became more shadow than substance. It was not too early in May 1934 to say that under the Agreement too much was contemplated without precedent in international actions dealing with wheat.

The purely objective record of developments

¹ The Australian crop estimate now standing is 174 million bushels, as against 160 million in January 1934; the Argentine is 286 million, as against 256 million.

in international trade during 1933-34 includes the facts that Argentine net exports in January-July 1934 constituted a smaller fraction of the crop than in any of the preceding seven years, and that there was a more than seasonal decline of Argentine shipments during a six-week period beginning in mid-March (Chart 15, p. 165). From these facts it would not be unreasonable to infer that the Argentine government, possessing heavy stocks acquired through purchases at the fixed minimum prices,¹ tended (mainly in March-April) to restrict sales to exporters pending the outcome of negotiations to enlarge the 1933-34 export quota. There are also passages in the official Argentine statement of July 18 which suggest that the official intention was to limit 1933-34 exports to a quota of 150 million

bushels as accepted by Argentina under the Note of Agreement of June 1933. If Argentine exports were in fact somewhat restricted through governmental action, it seems probable that Canadian exports gained correspondingly. The reported low volume and unusual seasonal flow of Argentine exports, however, are susceptible of alternative explanations—weakness of import demand and unwillingness of Argentine exporters to purchase government stocks and ship wheat unsold. Whether or not the Argentine government, influenced by the International Wheat Agreement, tended in fact to restrict exports in 1933-34 is a question to which the answer must be deferred until a reasonably adequate record of the official operations and policies is made public.

IV. WHEAT PRICES

In 1933-34, for the third successive year, international wheat prices stood at a new record low level in terms of gold. The average price of British import wheat was 43 gold cents per bushel, as compared with 52 gold cents in the preceding year and 57 gold cents in 1931-32. Chart 7 shows these prices in historical perspective. The low gold prices of the past three crop years have been due to the same general set of circumstances—to excessive wheat supplies, to the general economic, deflationary, and psychological factors reflected in the low level of wholesale commodity (and particularly agricultural) prices, and to the drastic depreciation of many national exchanges in terms of gold.

At first glance it may appear surprising that international wheat prices should have averaged lower in 1933-34 than in the preceding year when the world wheat crop ex-Russia was substantially larger. But larger initial stocks and slightly reduced consumption in 1933-34 more than offset the smaller 1933 crop; and British, American, and numerous other national exchanges moved still farther away from gold parity (Chart 13, p. 161). Moreover, although the prices of a few basic agricultural commodities were higher in terms of gold in 1933-34, many

important commodities declined in price between 1932-33 and 1933-34; and all three of the major price indexes for the United Kingdom—the Board of Trade index, the *Economist* index, and the Sauerbeck index—averaged lower on a gold basis in the later year. The following tabulation shows the percentage decline in British import wheat prices as compared with percentage price changes of certain other specified commodities imported into the United Kingdom, and with percentage changes in the three major indexes of British wholesale commodity prices, between 1932-33 and 1933-34.

Com- modity or index	Change in English cur- rency	Change in gold	Com- modity or index	Change in English cur- rency	Change in gold
Wheat	-9	-16	Rubber	+91	+73
Bacon	+26	+16	Sugar	-7	-14
Barley	-16	-22	Tea	+37	+26
Butter	-12	-19	Tobacco	-4	-11
Beef	-13	-20	Wool	+39	+28
Coffee	-31	-37	Board of Trade index.	+3	-5
Cotton	+4	-4	<i>Economist</i> index	+4	-4
Eggs	-8	-15	Sauerbeck index	+3	-5
Maize	-9	-16			
Rice	-17	-24			

Although the percentage decline in the price of British import wheat was large in relation to the change in British wholesale commodity prices in general, it was neither particularly

¹ See below, p. 157.

large nor especially small compared with changes of the other agricultural commodities considered. Of the five commodities for which price increases were recorded, three (cotton, rubber, and wool) were non-food products, and a fourth (tea) was a relatively unimportant food product. On the whole, the important food commodities declined in price about as much as or even more than did wheat.

While British import wheat averaged lower in shillings and pence in 1933-34 than in any other crop year since wheat became an important commodity in international trade (Chart 7), the lowest *monthly* price of British

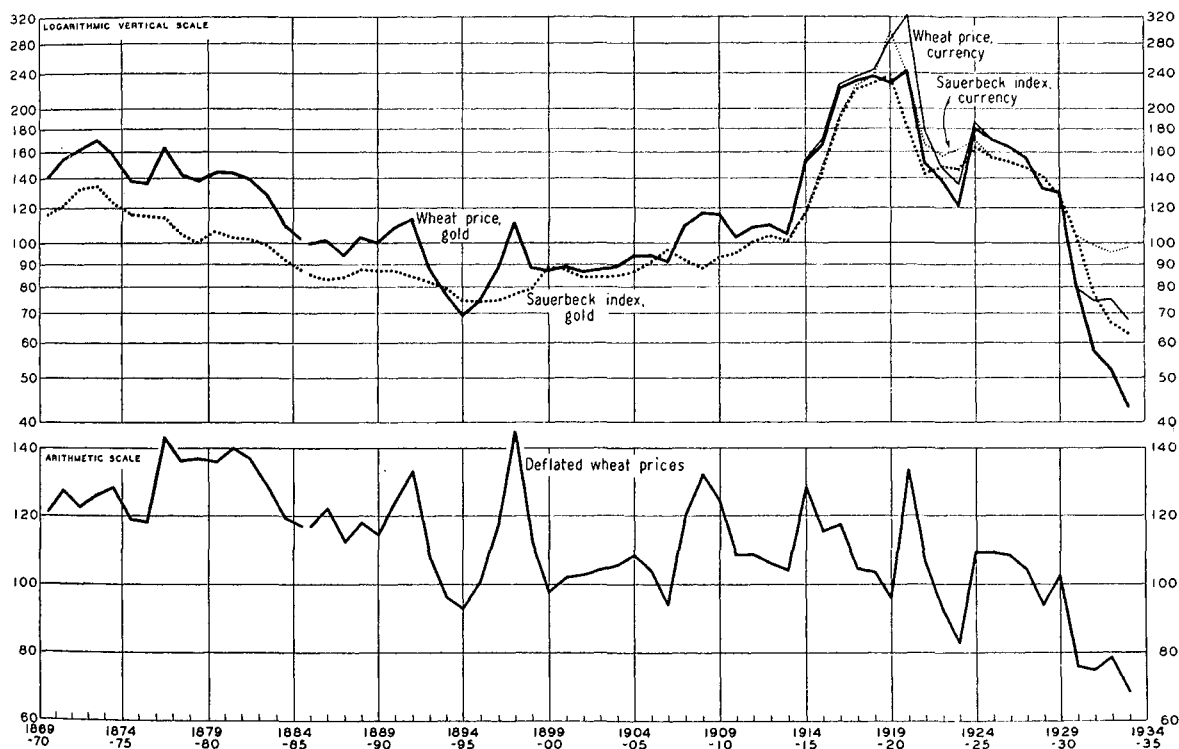
purchasing power of British import wheat did not in any month of 1933-34 fall to as low a level as that witnessed in September and October 1931, despite the fact that for the crop year as a whole the purchasing power of wheat was unprecedentedly low in 1933-34 (Chart 7, lower section).

WHEAT PRICE LEVELS AND MOVEMENTS IN DIFFERENT COUNTRIES

Almost universally—in leading importing as well as exporting countries, in protected as well as unprotected markets, in countries with undepreciated currencies as well as in those

CHART 7.—BRITISH IMPORT WHEAT PRICES IN GOLD AND CURRENCY; BRITISH COMMODITY PRICE INDEXES; AND DEFLATED PRICE OF BRITISH IMPORT WHEAT, ANNUALLY FROM 1870-71*

(Wheat prices in U.S. cents per bushel; commodity price indexes as percentages of commodity prices in 1910-14)



* Calendar year average prices and index numbers prior to 1885-86; thereafter August-July averages. Conversions for currency prices at par of exchange; conversions for gold prices at current exchange rates until April 1933, thereafter based on the price of gold in London. Sauerbeck-Statist index of wholesale commodity prices adjusted so that average of original (base 1867-77) index numbers in 1910-14 should equal 100. Figures plotted in lower tier are August-July averages of monthly currency prices of wheat, deflated by monthly values of the Sauerbeck index (1910-14 = 100).

import wheat in 1933-34 was appreciably higher than the prices recorded for September and October 1931, when British import prices were still unaffected by change in the gold value of English currency. Similarly, the

with depreciated currencies—domestic wheat prices averaged lower in 1933-34 than in 1932-33, as currently quoted both in the domestic currencies of the individual countries and in terms of gold. Three countries stand

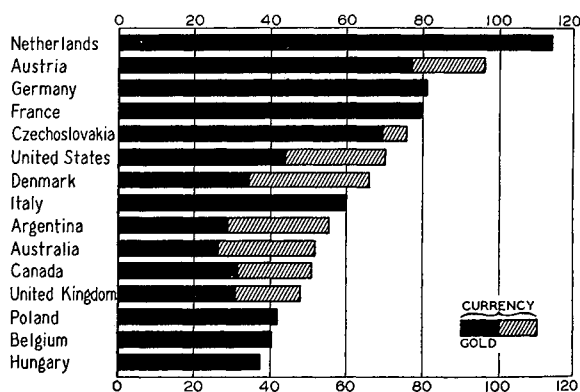
out as notable exceptions to this general price tendency—France, the United States, and Canada; and only in France (where quoted wheat prices were in some part nominal) and in the United States did wheat prices average higher in gold in 1933-34. In most countries the level of prices in gold was lower in 1933-34 than ever before in post-war years, though in a few European countries with protected markets it was the lowest only since 1923-24, when world wheat supplies were relatively less abundant, but European markets were less well protected, than in the last few years.

As compared with wheat prices in immediate pre-depression years, the level in 1933-34 was most strikingly reduced in free-exporting and free-importing countries, least reduced in importing countries with highly protected markets. Other factors equal, nations with depreciated currencies found it easier to maintain their domestic wheat prices at a satisfactory level in terms of domestic currency than did nations with undepreciated currencies. These generalizations are supported by Chart 8, which shows for fifteen importing and exporting countries the percentage relationship of domestic wheat prices in 1933-34 to the average of corresponding prices in January 1928-December 1929.¹ In this chart the various countries are ranked according to the percentage level of their wheat prices in terms of domestic currency. For countries whose currencies remained undepreciated in 1933-34, the black bars indicating relative gold prices also serve to indicate relative prices in domestic currency; but for countries with depreciated currencies, domestic currency prices are indicated by extensions (cross-hatched) of the bars showing the relative gold prices.

Of the various countries listed in Chart 8 only Netherlands had higher wheat prices in 1933-34 than on the average in 1928 and 1929. That was due largely to the fact that Netherlands shifted from the position of a free-importing country in pre-depression years to a country with highly protected wheat

markets in 1933-34. In contrast, Germany, France, and Italy, which ranked third, fourth, and eighth, respectively, as regards price maintenance in 1933-34, had had efficient systems of protection in operation even before 1928: these countries shifted position between pre-depression and depression years only in the sense that they added further import and price controls as world wheat prices declined. At 60 per cent of the January 1928-December 1929 average, Italian wheat prices in 1933-34 were relatively lower in domestic currency and relatively only a little higher in gold than were wheat prices in the United States. This reflected, on the one hand, the artificially high wheat prices in Italy in pre-depression years, and, on the other hand, the unusual domestic wheat situation and the depreciated currency of the United States in 1933-34.

CHART 8.—DOMESTIC WHEAT PRICES IN VARIOUS COUNTRIES IN 1933-34 AS PERCENTAGES OF PRICES IN JANUARY 1928-DECEMBER 1929*
(Percentage)



* Data mainly from official sources and the International Institute of Agriculture. For prices in principal countries see Tables XXXII and XXXIII.

¹ These two years were chosen to represent a pre-depression level largely because comparable price data could not be obtained for certain countries prior to 1928.

The purchasing power of wheat over other commodities sold at wholesale was in 1933-34 again notably low, as compared with pre-war and pre-depression post-war years, in exporting and relatively free importing countries, but about as high as in those two earlier periods in importing countries with protected markets. The following tabulation shows indexes of purchasing power of wheat since 1929-30 in four leading importing and four leading exporting countries, with the pur-

chasing power of wheat in 1909–10 to 1913–14 equal to 100 per cent.¹

Country	1929–30	1930–31	1931–32	1932–33	1933–34
Argentina	96	63	62	60	55 ^a
Australia	79	50	59	61	51
Canada	88	53	53	54	63
United States	76	57	48	56	75
United Kingdom .	92	73	75	72	59
France	88	128	141	102	121
Germany	93	107	111	101	93
Italy	109	107	116	120	104

^a Eleven months.

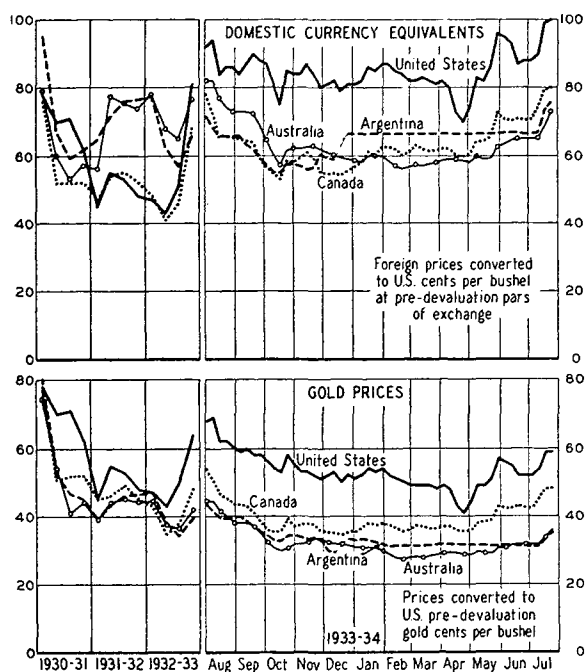
In Argentina, Australia, and the United Kingdom, a bushel of wheat bought less of other commodities in 1933–34 than in any of the preceding depression years (except 1930–31 in Australia) and only about half (60 per cent in the United Kingdom) of what could have been bought in pre-war years. In Canada and the United States, on the other hand, wheat was worth more in terms of other commodities in 1933–34 than it had been since the first year of the depression: in Canada it was approximately two-thirds, in the United States, three-quarters, of pre-war parity. On the protected markets of Germany, France, and Italy wheat prices have stood during recent depression years at levels somewhat higher in relation to other commodity prices than those which obtained on the average in 1909–14, though German prices fell slightly below pre-war parity in 1933–34.

In a number of important wheat-producing countries, the purchasing power of wheat is now an extremely poor index of the economic position of the average wheat farmer. It has always been poor in the sense that it does not take into account variations in the size of domestic crops, and that the wholesale commodity price indexes used in deflation do not show the same changes from year to year as would the more appropriate indexes of prices of commodities ordinarily purchased by farmers. In recent years, however, there is an additional reason for exercising caution in interpreting indexes of purchasing power of wheat: the provision in certain countries for price-supplementing subsidies to wheat farm-

ers. Among the countries considered above, the United States, Australia, and Great Britain all made some form of direct supplementary payment to large groups of domestic wheat farmers in 1933–34. This suggests that, although the purchasing power of wheat in 1933–34 was relatively lower in these countries (as compared with pre-war and pre-depression post-war years) than in France, Germany, or Italy, one cannot properly conclude that American, Australian, and British farmers were suffering a relatively greater loss in economic position in 1933–34 than were French, German, and Italian farmers.

The four chief exporting countries.—Chart 9 shows for each of the four major exporting countries the relative level and course of

CHART 9.—WHEAT PRICES IN MAJOR EXPORTING COUNTRIES, QUARTERLY 1930–33, AND WEEKLY AUGUST 1933–JULY 1934*
(U.S. cents per bushel)



* No. 2 Hard Winter wheat at Kansas City; Argentine wheat, 78-kilo; Melbourne, f.a.q. wheat; and No. 3 Manitoba at Winnipeg. Series described in footnotes to Table XXXII.

wheat prices as they appeared in terms of the domestic currency of the country concerned (upper section) and in terms of gold (lower section). In the upper section of the chart,

¹ For details of construction and information regarding the base period (which is not strictly the same for each country) see WHEAT STUDIES, December 1933, X, 95, 97 (footnotes to Charts 14 and 16).

prices for the United States and Canada appear as quoted; prices for Argentina and Australia are in terms of United States cents with conversions at pre-devaluation pars of exchange—conversions which give a picture of wheat price movements as they were actually recorded in these countries.

In domestic currency, wheat prices in both the United States and Canada stood at an appreciably higher level in 1933-34 than in the preceding crop year. To a large extent this simply reflected the various political, speculative, liquidative, and monetary developments which, after March 1933, resulted in drastic depreciation of American and Canadian exchange in terms of gold currencies on foreign exchange markets (Chart 13, p. 161). But since United States wheat prices were also higher in terms of *gold* in 1933-34, and since Canadian wheat prices in *gold* averaged only slightly lower in 1933-34 than in 1932-33, it appears that factors outside the monetary field must have been of importance. Among these, the most influential were the small 1933 crops in the United States and Canada, government-sponsored wheat holdings and market operations in Canada, and the early poor prospects for the grain crops of 1934.

Despite devaluation of the Argentine peso in November 1933 and establishment of legal minimum prices for grain in the following month, Argentine wheat prices averaged somewhat lower in pesos in 1933-34 than in the year preceding. That this was not primarily due to the larger Argentine wheat crop of 1933 is evident from the fact that during the months when the new crop was being marketed (December-July) Argentine wheat prices were higher in 1933-34. It was the low prices in the early months of the crop year that reduced the average for 1933-34: in these months, the attention of Argentine traders was centered on the unusually large exportable supplies remaining from the 1932 crop, on the restricted import demand for wheat in Europe, and, after mid-September, on the improved outlook for the new Argentine crop.

Not in a single month of 1933-34 did Australian wheat prices, as quoted, stand as high as in the corresponding month of the preceding

year—and this despite the much smaller Australian wheat crop of 1933. In 1933-34, new monetary developments, such as those then tending to raise Canadian and United States wheat prices, were all but lacking in Australia. Nor were Australian wheat prices significantly supported by either direct or indirect governmental action such as was important in all three of the other exporting countries, but particularly in Argentina. In terms of gold, Australian wheat prices, like wheat prices in Canada and Argentina, were lower in 1933-34 than ever before.

The course of cash wheat prices in the four major exporting countries ran roughly parallel to the course of futures prices in those countries and at Liverpool. This phase of the price problem is discussed below (pp. 154-60).

The Danube countries.—A picture of the level and course of wheat prices in the four Danube exporting countries is shown in Chart 10 (lower section). These prices, converted at old pars of exchange, are plotted to show the course of wheat prices as actually recorded in each country, in the currency of the country named. Since the exchanges of Hungary, Rumania, and Bulgaria have remained close to gold parity during 1929-34, the wheat prices indicated for these countries may also be taken to approximate prices in gold; but from the beginning of 1932-33 gold prices of wheat for Yugoslavia would run lower than the prices shown in the chart.

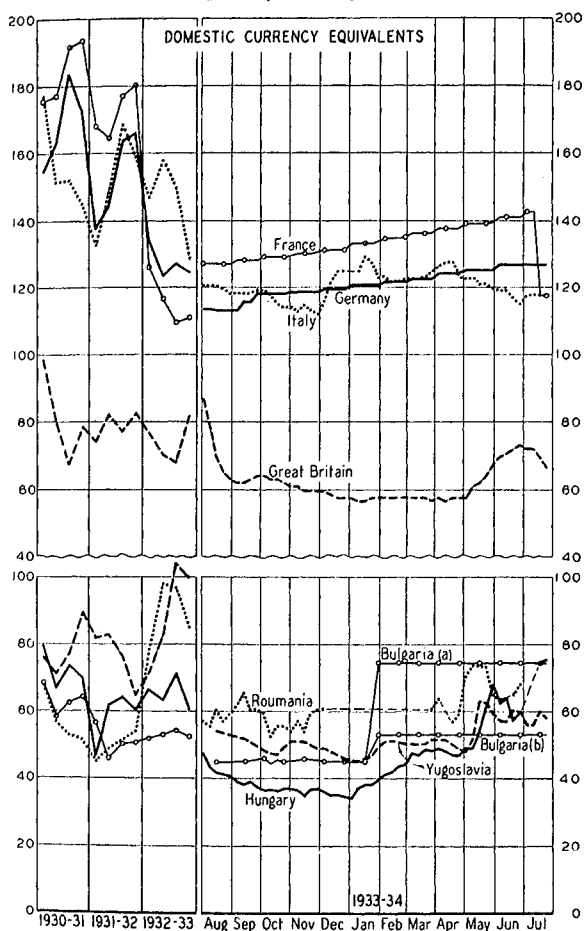
In all four of the Danubian countries, wheat prices averaged lower both in domestic currency and in gold in 1933-34 than they had in the preceding year, when Danubian crops were notably short and the level of world wheat prices was somewhat higher. In Rumania, quoted wheat prices had twice before in depression years averaged lower than they did in 1933-34. The same was true of the selling price (as opposed to the original buying price) of wheat in Bulgaria. In both countries the higher prices of 1933-34 were largely attributable to direct governmental support of prices,¹ though in Rumania a probable addi-

¹ In Bulgaria, governmental support of the wheat market took the form of governmental monopoly of all trade in wheat after January 26, with the monopoly

tional factor was the moderate size of the domestic crop relative to requirements, including replenishment of depleted stocks.

CHART 10.—WHEAT PRICES IN LEADING EUROPEAN IMPORTING AND EXPORTING COUNTRIES, QUARTERLY 1930–33, AND WEEKLY FROM AUGUST 1933*

(Converted to U.S. cents per bushel at pre-devaluation par of exchange)



* Original price series described in footnote to Table XXXIII.

^a Monopoly price to millers.

^b Price paid to producers.

The course of wheat prices in the Danube countries was not strikingly different from

buying price of wheat set at 270 leva per quintal and the monopoly selling price set at 380 leva per quintal. In Rumania, wheat prices were maintained during a considerable part of the year through market operations of the government-created grain commission, which operated with government funds but did not have monopoly powers. This commission was abolished in December 1933, but re-established in the following March.

the course of prices (gold) in the four major exporting countries and on the British import market, except that Bulgarian prices (fixed by government monopoly) remained stable instead of rising during February–July, and that the general price advance of April–May was more pronounced, and firmness in prices in June–July less apparent, in Hungary, Yugoslavia, and Rumania than in most active exporting and free-importing countries. The striking bulge in Danubian prices in April–May 1934 was associated with early startling reports of crop damage by spring drought in southeastern Europe. The publication of somewhat less pessimistic reports of the Danubian crops in June–July caused Danubian wheat prices to weaken, despite the fact that international wheat prices were then advancing on reports of short crops in other areas, particularly North America.

European importing countries.—In almost all European importing countries domestic wheat prices stood considerably lower in 1933–34 than they had in pre-depression years; but in certain countries the 1933–34 average was much farther below pre-depression prices than in others. These differences in relative price level in 1933–34 were mainly the result of two important sets of factors: (1) the specific governmental measures employed by the various countries to protect their domestic wheat markets, and (2) the different financial and exchange positions of the various countries. In general, the countries with the most heavily depreciated national exchanges and the most stringent wheat import, milling, and/or price restrictions were able to maintain domestic wheat prices at relatively higher levels in domestic currency than were countries with relatively free import markets and less depreciated or undepreciated exchanges. In 1933–34 there remained only one or two European countries which could be said to have both free-import markets and undepreciated currencies; on the other hand, there were but few countries which had both highly protected wheat markets and depreciated currencies. France, Germany, and Italy may be taken as leading examples of countries which in 1933–34 had undepreciated currencies but very stringent

regulations to protect their domestic wheat markets; Great Britain is an outstanding example of a country with a depreciated currency and a relatively free wheat-import market. The level and course of domestic wheat prices in these four countries are shown in Chart 10 (upper section), with prices converted so that the course of prices for any given country appears as it would in terms of the original currency.

On the highly protected markets of France, Germany, and Italy, domestic wheat prices were maintained far above the existing level of international wheat prices. The level and consistent upward course of domestic wheat prices in both France and Germany in 1933-34 mainly reflected governmental provisions for fixed minimum prices in those countries. We cannot yet tell to what extent prices quoted on the Paris market were true market prices and to what extent they were merely nominal in character. That there were many sales of wheat in France below the fixed legal minimum rates is not to be questioned; that the prices at which some of these sales were made were far below the legal levels is suggested by price quotations in the *Bulletin des Halles*, which indicate that from June 3 to July 11 prices for "blé-gangster" ranged 28-43 cents per bushel below prices for "blé-officiel" (conversions at old par of exchange). There is no reliable basis, however, for appraising either the yearly average level of actual sales prices in relation to the fixed prices or the amount of deviation of the sales prices from the fixed prices in successive months.

Germany's price-fixing system apparently operated more successfully than did that of France; and the German wheat prices shown in the chart—actually legal minimum producers' prices in the Berlin area—may be taken to represent more or less exactly the prices paid for wheat of specified grade to farmers in the Berlin district.

Italy had no government price-fixing system but depended mainly upon tariffs, milling quotas, and government-sponsored storage of wheat to support her domestic wheat markets. Consequently, domestic wheat prices in Milan fluctuated more with apparent changes in

the general wheat position than did quoted prices in either Paris or Berlin. During August-November 1933, Italian wheat prices declined along with international prices; in December, their downward course was interrupted by the strengthening of governmental controls and as a result of local marketing conditions; and after May they weakened in the face of rising international prices, because of pressure of old-crop supplies and because movement of the new domestic crop was imminent.

In Great Britain, domestic wheat prices ruled higher in terms of English currency than would have been the case if sterling had not been at a discount against gold currencies. Nevertheless, in terms of English currency as well as gold, British domestic wheat prices stood lower in 1933-34 than they had for several decades. As usual, the course of these prices in gold was closely related to the course of prices in active exporting countries and on the British import market (Table XXXIII).

THE COURSE OF FUTURES PRICES

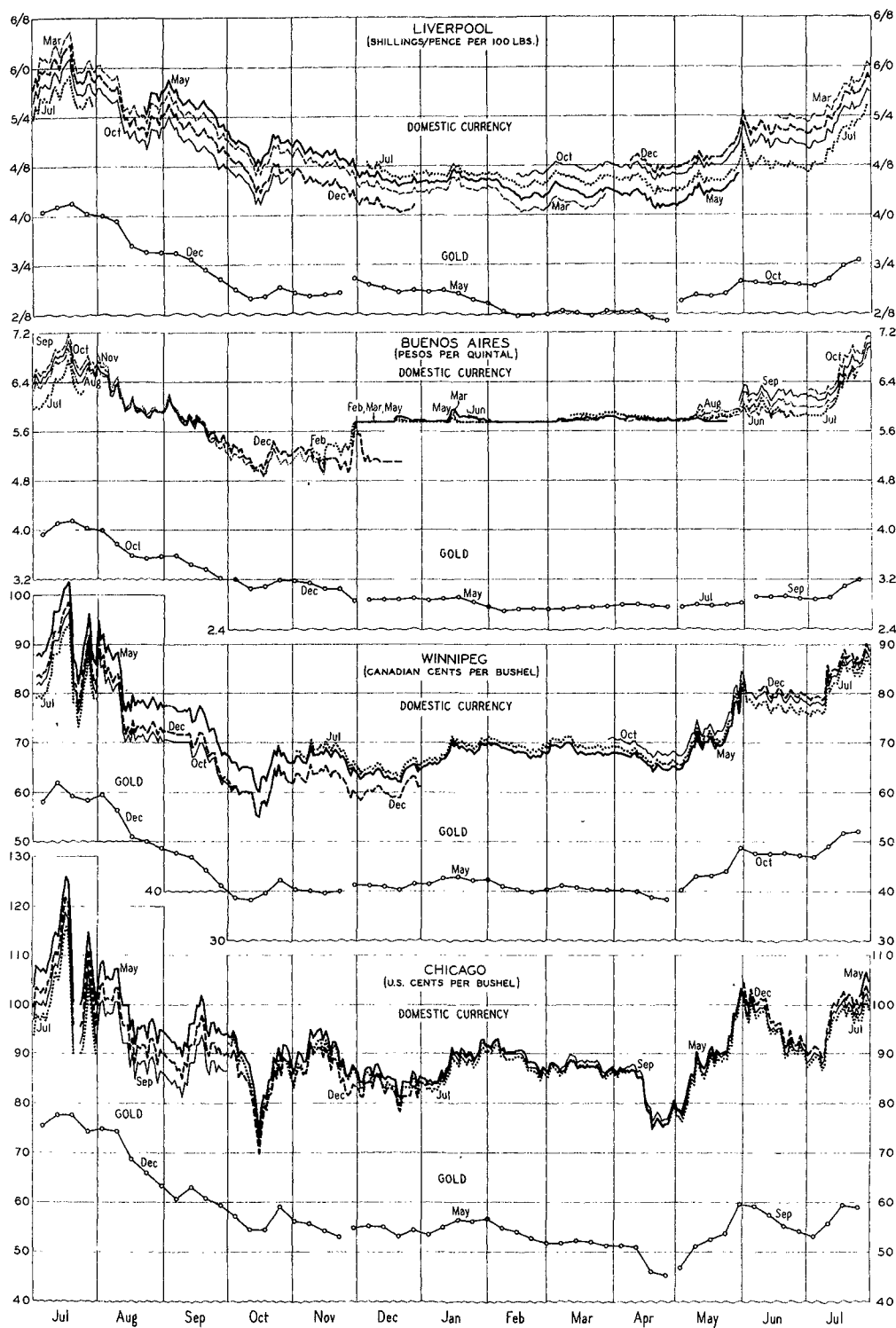
Drawn in broad outline, with detailed fluctuations neglected,¹ the course of wheat futures prices in 1933-34 might be represented by three lines: one sloping rather steeply downward from mid-July to mid-December; one practically horizontal in trend from mid-December to the end of April; and a third sloping upward during May-June. The proper degree of slope of each of these lines can be determined from Chart 11.

The general decline in wheat futures prices from mid-July to mid-December was the net result of a number of different price influences. In the early part of this period weakening influences were concentrated most heavily in North American markets, where there was heavy and prolonged liquidation of wheat futures following the speculative boom of April-mid-July.² After the first sharp break

¹ For a more detailed analysis of the course of wheat futures prices in 1933-34, see our three surveys of the wheat situation in 1933-34: *WHEAT STUDIES*, January 1934, X, 164-70; *ibid.*, May 1934, X, 266-72; and *ibid.*, September 1934, XI, 8-14.

² For an analysis of price movements in these months, see "The World Wheat Situation, 1932-33," *WHEAT STUDIES*, December 1933, X, 102-05.

CHART 11.—WHEAT FUTURES PRICES IN LEADING MARKETS, 1933-34*
(Currency and quantity units as designated)



* Data (closing prices) from *London Grain, Seed and Oil Reporter*, *Winnipeg Grain Trade News*, *Chicago Daily Trade Bulletin*, and *Revista Semanal*.

in North American prices in mid-July, Chicago wheat prices (and indirectly, and in lesser degree, Winnipeg and Liverpool prices) were significantly supported until August 15 by emergency regulations imposed by the Chicago Board of Trade;¹ and thereafter, until September 14, similar regulations at Winnipeg² served as a price-sustaining influence. Nevertheless, liquidation of North American wheat futures was heavy during July 24-September 15, and wheat prices in all futures markets declined substantially, though less than probably would have been the case in the absence of the control measures imposed by the Chicago and Winnipeg grain exchanges.

The following month (September 16-October 17) was characterized by continued severe decline. Russian, German, and Danubian wheats were pressed heavily upon British import markets, where stocks were already ample; the outlook for the Argentine crop greatly improved as the result of well-distributed rains after September 10; standing crop estimates for Northern Hemisphere countries were revised upward by over 27 million bushels (according to figures published by the United States Department of Agriculture); and political and financial developments in the United States were such as to discourage further speculative buying or holding of commodities in anticipation of general price inflation. Particularly noteworthy was the spectacular break in North American wheat prices in the three business days between Octo-

ber 11 and 16. At Chicago, wheat futures prices fell by approximately 14 cents—only a cent less than the maximum three-day reduction allowed under the rules of the Chicago Board of Trade. And although the decline in Canadian markets was much less drastic, it appears to have been so largely because of stabilizing purchases for the account of the general wheat agent supported by the Canadian government. Apparently primarily responsible for this three-day decline was the announcement on October 11 of the bond-conversion plan of the United States Treasury. This announcement was widely interpreted to indicate that President Roosevelt had definitely decided not to embark upon a course of currency inflation. The American dollar rose in relation to gold currencies on foreign exchange markets (see Chart 13, p. 161), and in the United States common stocks and speculative commodities dropped sharply in price. Canadian and English exchange and commodity prices were also affected, but in less degree.

On October 17 there was general price reaction in United States commodity markets, associated with renewed decline of the American dollar in relation to foreign gold currencies. United States wheat markets were affected not only by change in sentiment regarding monetary matters, but by substantial purchases of both cash wheat and wheat futures for the account of the Federal Emergency Relief Administration. For about a week following October 17 wheat futures prices continued upward practically without setback, both in the United States and in foreign countries. In the United States, additional purchases of wheat were reported to have been made by the government relief agency; mill buying was heavy; and "inflation talk" again became prominent, partly as a result of the announcement of President Roosevelt's plan to establish a government market for newly mined domestic gold. At Liverpool and Winnipeg wheat prices were strengthened by improved European import buying, by reports of unfavorably hot weather in Argentina and Australia, and by monetary developments reflected in renewed depreciation of Canadian and sterling exchange.

¹ All United States future markets were ordered closed during July 21 and 22; during July 24-27 trading was carried on under regulations which limited daily price changes in wheat futures to 8 cents above or below the average closing price of the preceding business day and which provided that no wheat future should be sold at a price below the average closing price on July 20; from July 28 to 31 no minimum price restrictions were in force, but daily price changes were limited to 5 cents; during August 1-15 absolute minimum prices were set at the levels prevailing at the close on July 31 and daily price changes continued to be limited to 5 cents. The latter restriction on daily price changes remained in force throughout the remainder of 1933-34, and at the date of writing is still in operation.

² From August 15 to September 14 no sales of Winnipeg wheat futures could be made at prices below the closing prices on August 14.

Developments and rumors relating to the general monetary and exchange situation continued to be a dominating factor in wheat futures markets until early December. As the two principal North American currencies declined on foreign exchange markets during the first half of November (Chart 13, p. 161), wheat prices at Chicago and Winnipeg tended upward. On the other hand, strength in sterling exchange throughout November, and appreciation of American and Canadian exchange during the latter half of that month, were associated with declining wheat prices. In Argentina, where exchange control was instituted on November 28, with resulting depreciation of Argentine exchange in world markets, wheat prices immediately rose to higher levels in terms of domestic currency. These higher prices, however, appear to have been more closely associated with the government's provision for minimum wheat prices (also announced November 28) than with depreciation of the peso.¹ The world wheat situation itself continued to be more bearish than bullish throughout November and early December 1933, and had a net depressing effect upon prices in all of the leading wheat futures markets.

From early in December to the end of April world wheat prices were relatively stable. International exchange relationships were maintained about unchanged, and developments in the wheat situation were far from spectacular.

¹ This is suggested by the fact that the Buenos Aires December future, which at first rose as sharply as did the more distant futures, immediately declined when it became clear that the government's provision regarding minimum prices applied only to new-crop wheat.

² This is suggested by the course of Argentine wheat prices on British markets.

³ The exchange control system inaugurated by the Argentine government on November 28 provided for both an official exchange market and a free market. Only bills of exchange derived from the exportation of commodities not usually exported and bills received in exchange for certain services, etc., could be sold on the free market. Bills secured through the sale of commodities normally exported on a fairly large scale had to be sold to the Exchange Control Committee at fixed official prices, which prior to January were based on the French franc and thereafter upon the English pound. These bills were subsequently sold to importers (mainly on an auction basis) on the official exchange market at a good profit.

During most of this period the trend of international wheat prices was dominated by the wheat-selling policy of the Grain Regulating Board of Argentina. This Board, created November 28, was authorized to buy all new-crop domestic wheat offered to it at the basic price of 5.75 paper pesos per quintal, and to resell this wheat to Argentine exporters at competitive world prices, the determination of which was apparently left to the discretion of the Board. Although the daily resale prices have not been made public, two facts regarding the Board's selling policy seem to be clear. First, the Board interpreted its function to be that of buying and selling, rather than buying and holding, wheat. Second, during December–April the Grain Board apparently sold wheat to Argentine exporters at a fairly constant discount under the official basic buying price.² The loss which resulted from these operations was made up many times over through the profits on sales of foreign exchange in the official market in Argentina.³

That international wheat prices were dominated during December–April by the selling policy of the Argentine Grain Board was due in considerable measure to the fact that the wheat of none of the other major exporting countries was pressed aggressively on European import markets during those months. In Canada, the government selling agency appeared to be more concerned with preventing Canadian wheat prices from declining significantly than with the problem of reducing domestic wheat stocks through heavier exportation; in Australia, farmers showed inclination to hold their grain; and in the United States, wheat prices were maintained far above export parity through speculative holding based to a large extent upon political rumors and developments which bore on prospects for inflation.

During December–April, wheat prices fluctuated considerably more at Chicago than at Liverpool, Winnipeg, or Buenos Aires. Two movements recorded at Chicago during this period are particularly noteworthy: (1) a fairly sharp sustained rise near the middle of January that was attributed partly to domestic wheat crop and stocks reports and partly to

monetary developments;¹ and (2) a spectacular price decline during April 11-19. Although the mid-April decline was variously explained in different market reviews, it appears to have been largely due to the fact that speculative holders of Chicago grain futures had become more or less discouraged over deferment of inflation prospects and were anxious to liquidate their holdings before May 1, when they might be called upon to take grain deliveries. Announcement by the United States Treasury (April 11) that no anti-dumping duty would be levied on imports of Polish rye; reports (April 16) that the Administration was for the time being opposed to further silver legislation; and a press statement (April 16) that Secretary Wallace expected a closer alignment between domestic and world wheat prices within six to eight months² were factors which probably influenced the timing and extent of the decline, but were not chiefly responsible for its occurrence.

In contrast with the weakness at Chicago, and to a less extent at Winnipeg and Liverpool during April, the three following months were characterized by rising prices in all wheat futures markets. World-wide drought threatened to cut the 1934 wheat crop to such a low figure that there appeared to be prospects of greatly reducing and perhaps even eliminating the world wheat surplus in 1934-35. Such prospects could not fail to stimulate speculation in wheat futures markets; and wheat prices advanced rapidly during May-July.

This advance was concentrated in two periods: May 3-31 and July 11-31. The May rise was led by North American markets, where attention was centered upon the bad outlook for the United States winter-wheat crop and the serious drought conditions which were hindering seeding and interfering with

germination of spring wheat in both the United States and Canada. During the first half of May, Liverpool traders refused to take alarm over the wheat crop situation in North America and appeared not to be greatly impressed even by the bullish crop reports emanating from the Danube basin and central Europe. But as the weeks passed and adequate rains did not come to relieve the drought in these several areas, buying of Liverpool futures became more active, and prices there rose sharply. At the very end of May, Buenos Aires futures prices rose significantly above the official minimum price for the first time in six months: these higher levels were sustained throughout June-July, and in those months Argentine wheat markets resumed practically all the characteristics of free markets.

During June, bullish and bearish market forces about offset each other, except at Chicago where there was a substantial price reaction following the crop-scare advance of the previous month. Beneficial rains in Canada and the spring-wheat belt of the United States, and hedging pressure resulting from early movement of the new winter crop, were the major price-depressing factors. Against these were set the low (but not lower than anticipated) June forecasts of North American crops, increasingly bullish crop news from Europe, and reports of acreage reduction and continued drought in Australia. Moreover, there were indications that wheat futures at Winnipeg were occasionally supported in June by purchases for the account of the government agency.

Beginning July 11 and continuing well into August, wheat futures prices advanced spectacularly in all markets. The United States official crop report for July was unexpectedly bullish, and North American and European weather conditions were strikingly unfavorable for the growing crops. Canadian grain crop prospects were drastically reduced by excessive heat, drought, and grasshoppers; in the United States, record-breaking heat and widespread drought wrought some further damage to the wheat crop and seriously lowered the condition of the corn crop; and in a number of European countries and Australia, the wheat crop outlook appeared poor, largely

¹ On January 15 President Roosevelt requested Congress to provide legislation that would facilitate dollar revaluation, including a measure that would specifically set the upper limit of revaluation at 60 per cent of the existing gold parity. Enactment of the requested legislation was completed January 30; and on January 31 the dollar was officially revalued by Presidential proclamation at 59.06 per cent of its former worth (i.e., the gold content was fixed at 15 5/21 grains of gold nine-tenths fine).

² Except temporarily, this closer alignment has not occurred.

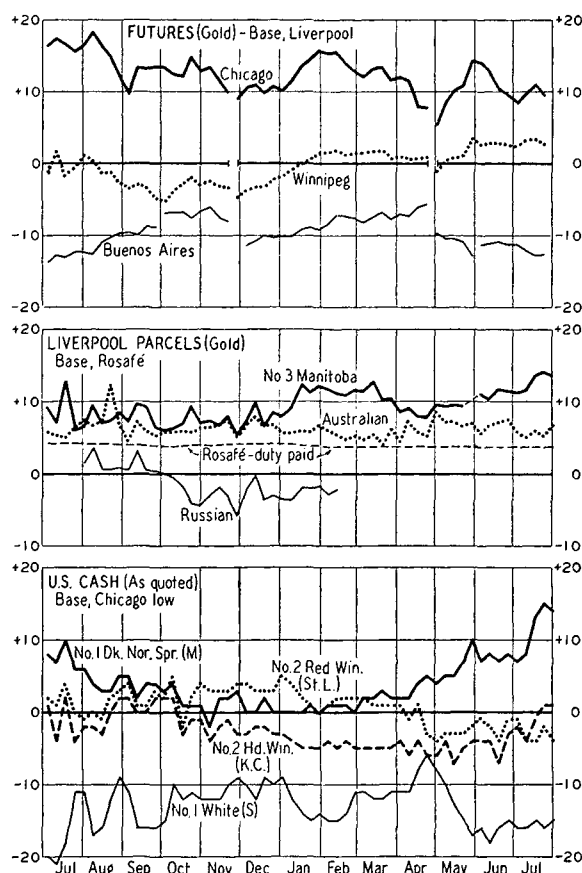
on account of earlier and/or prevailing drought. Toward the end of July, Liverpool assumed leadership in the wheat price advance, and futures prices rose more rapidly there than at Winnipeg or Chicago. This was in striking contrast with the situation during the last month of the price rise of May–July 1933, when Liverpool responded but feebly to the continued upward movement in North American markets. The fundamental difference in market reaction in these two periods reflected the different character of the influences operating in 1933 and 1934. In 1933, speculative activity in North American markets was based to a considerable extent upon anticipation of dollar devaluation and/or upon apparent inflation prospects — influences which were little regarded at Liverpool; whereas in 1934, wheat prices rose mainly in response to adverse crop developments which were interpreted as significant by Liverpool and Buenos Aires traders as well as by traders in North America.

SIGNIFICANT WHEAT PRICE RELATIONSHIPS

Spreads between futures markets.—The outstanding feature of international futures price relationships in 1933–34 was the continued high premium on Chicago futures (Chart 12, top section). Throughout practically the whole of the crop year, Chicago prices stood between 15 and 25 current United States cents, or between 10 and 20 pre-devaluation gold cents, above wheat prices at Liverpool, and almost as far above Winnipeg prices. In terms of depreciated United States currency the premium on Chicago futures was larger than ever before. And only twice before during post-war years have Chicago futures in gold ruled as high in relation to futures at Liverpool—in December–May 1930–31 and April–July 1932–33. In neither of these two periods were Chicago prices maintained at a high premium for so long a time as in 1933–34; and in one of the earlier periods (1930–31) the high premium on Chicago futures arose not through the ordinary course of market trading but through “stabilizing” operations of the United States Farm Board. In August–July 1933–34, as in April–July 1932–33, Chicago prices were maintained far above prices

in other world markets largely through speculative buying and holding of wheat by private traders. The irregular course of the Chicago–Liverpool spread shown in Chart 12 appears mainly to have reflected fluctuations in speculative sentiment at Chicago.

CHART 12.—SIGNIFICANT WHEAT PRICE SPREADS, WEEKLY, AUGUST 1933–JULY 1934*
(U.S. cents per bushel)



* For futures, weekly average spreads of prices in Chart 11 (converted to U.S. pre-devaluation gold cents per bushel through price of gold in London); Liverpool futures used as the base are successively the December, May, and October; futures corresponding as closely as possible to these were used for Winnipeg, Chicago, and Buenos Aires. See Tables XXXII and XXXIII for description of Liverpool parcels and United States cash prices.

The position of Winnipeg futures prices relative to prices at Liverpool in 1933–34 was scarcely less unusual than was that of Chicago prices. During six of the twelve months of the crop year, Winnipeg futures commanded higher prices than corresponding futures at Liverpool, despite the fact that Canadian wheat supplies were more than ade-

quate for domestic consumption, heavy exports, and a large carryover. Notably low ocean freight rates (Table XXVI), substantial purchases and heavy holding of Winnipeg wheat futures by the government agency and by private speculators, and the preference accorded to Canadian wheat by continental millers limited as to their total imports appear to have been the chief factors responsible for the relatively high price level for wheat futures at Winnipeg. The strength at Chicago also was at times reflected in Winnipeg prices.

Even Buenos Aires futures ruled at an unusually narrow discount (gold) under Liverpool futures, a fact probably largely attributable to the export-selling policy of the Argentine Grain Board¹ and to record low post-war freight rates (gold). The course of the Liverpool-Buenos Aires price spread roughly paralleled the course of freight rates on Argentine wheat (Table XXVI), particularly during the months of heaviest shipment.

Spreads on the British import market.—Price relationships among wheats sold on the British import market remained fairly constant throughout 1933-34 (Chart 12, middle section). In terms of gold, and even more strikingly in terms of British currency, Manitoba wheats commanded premiums somewhat larger than usual over parcels of Australian and Argentine (*duty-unpaid*) wheats. And even though in absolute terms the price spread in gold between Manitoba No. 3 and *duty-paid* Rosafé was not extraordinarily large, on a percentage basis this spread, too, was wider than in most preceding post-war years. As a result, the ratio of Canadian to Argentine wheat imports into the United Kingdom was considerably reduced in 1933-34.²

Australian wheat parcels consistently sold 5-8 gold cents above Rosafé parcels, *duty-unpaid*, as contrasted with 3-6 gold cents in

1932-33. Price competition between these wheats on the British market was therefore less strong than in 1932-33, a situation which was reflected in proportionally smaller imports of Australian wheat into the United Kingdom.

The sizable discount on Russian wheat, especially after October when Russian shipments became seasonally heavy, presumably reflected the irregular and lower quality of that wheat, and also the fact that wheat from Russia (like that from Argentina) is subject to an import duty in the United Kingdom.

Spreads between United States wheat prices. Chart 12, bottom section, shows price relationships in 1933-34 between wheats in leading United States markets. Except for White wheat at Seattle, the various wheats indicated differed less in price in 1933-34 than in most preceding post-war years. After May, however, the spreads widened significantly as spring-wheat prices advanced more rapidly under the influence of extremely adverse crop conditions in the Northwest and general seasonal influences. The increase in the Minneapolis-Kansas City spread (reflected in both cash and futures markets) led to substantial shipments of hard winter wheat from the Southwest to northwestern milling points. And durum wheat, the price of which was relatively high throughout 1933-34 (Table XXXII), rose to extraordinary premiums late in July; as a result, durum wheat was imported from Canada apparently for the first time since wheat was made subject to a 42-cent tariff in the United States.³

Although No. 1 White wheat at Seattle ruled at a larger discount under basic Chicago cash wheat in 1933-34 than in any of the three preceding years, the discount in 1933-34 was undoubtedly smaller than would have prevailed if exports had not been subsidized (see p. 140). From mid-October, when purchases for subsidized exports were first made, until the following May the course of wheat prices at Seattle and Portland was profoundly influenced by governmental operations. Changes in price spread between Chicago basic cash wheat and White wheat at Seattle mainly reflected, at least during November-April, the greater stability of Seattle prices (and, a step

¹ It seems probable that during December-May the Argentine Grain Board sold wheat to exporters at prices farther below prevailing prices of Buenos Aires futures than wheat can usually be obtained for export, and that in the same months Liverpool wheat futures prices were based upon expectations of delivery of Argentine wheat.

² See "British Preference for Empire Wheat," *WHEAT STUDIES*, October 1933, Vol. X, No. 1.

³ *Southwestern Miller*, July 31, 1934, p. 27.

farther back, of the bid prices of the Export Association) than of Chicago prices. Thus, the Chicago-Seattle price spread tended to widen whenever Chicago prices advanced significantly and to narrow whenever prices at Chicago declined. After early May the Export Association purchased but little wheat and its bid prices accordingly had little market influence. Yet as wheat prices rose sharply at Chicago during May, the Chicago-Seattle spread widened as it had earlier in the year whenever Chicago prices advanced. The failure of Seattle prices to advance more in May was attributable to the better crop prospects in the Pacific Northwest and to the tie-up of Pacific Coast shipments after May 9 by an effective strike of longshoremen and marine workers. Under ordinary circumstances a Chicago-Seattle spread as wide as that of May-July would encourage heavy shipments of wheat from the Pacific Northwest to eastern markets; but the port strike prevented such shipments from taking place.

At Chicago, new-crop wheat futures stood lower relative to old-crop futures than was to have been expected simply on the basis of the size of supplies for carryover. The principal modifying circumstances were shortage of contract wheat stocks at Chicago and general tightness in the cash position. Wheat was held strongly on farms and in mills; and practically throughout the year prices at Minneapolis, St. Louis, and even Kansas City were maintained too high relative to Chicago prices for wheat to be shipped from these markets to Chicago.

DOLLAR REVALUATION AND THE DOLLAR PRICE OF WHEAT

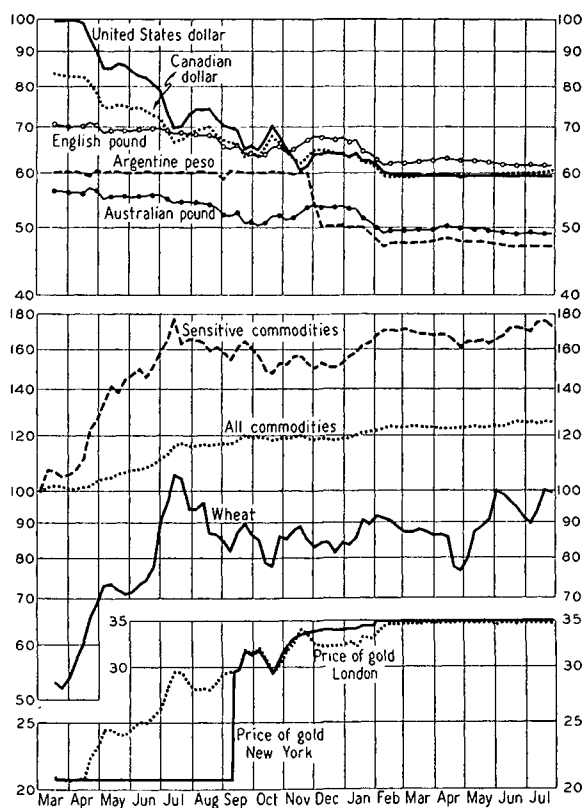
During the crop year under review (on January 31, 1934) occurred formal official revaluation of the United States dollar. With the lapse of about six months between a stabilized (though not legally a permanent) revaluation and the end of the crop year, it is almost inevitable that questions should arise concerning the quantitative effect of dollar revaluation, dissociated from all other influences, upon the dollar price of wheat.

From the first week of April 1933, before departure of the United States from the gold

standard, to the last week in July 1934, the end of the crop year under review, the official price of gold in dollars rose 69 per cent; over the same interval of time, the price of wheat (basic cash) at Chicago rose 74 per cent. The movement of these prices weekly over the interval is shown in Chart 13, which includes

CHART 13.—LEADING CURRENCIES AS PERCENTAGES OF GOLD PARITY; DOLLAR PRICES OF GOLD; UNITED STATES COMMODITY PRICE INDEXES; AND PRICE OF WHEAT, MARCH 1933-JULY 1934*

(Percentage of pre-devaluation gold parity; U.S. current dollars per ounce of gold and per bushel of wheat; percentage of commodity prices in the first week of March 1933; logarithmic vertical scale)



* Gold values of currencies based on daily price of gold in London and daily exchange rates. Other series: Moody's index of prices of fifteen staple commodities; U.S. Bureau of Labor Statistics index of wholesale commodity prices; Food Research Institute average of basic cash wheat prices at Chicago (see Table XXXII); price of gold in New York from Federal Reserve Board; and price of gold in London from *Economist* (London) converted to U.S. cents at current exchange rates.

other series also. A quantitative question pertinent to a review of wheat in the crop year 1933-34 is: What proportion of the 74 per

cent increase in the dollar price of wheat is attributable specifically to changes in the official gold value of the dollar?

In our considered opinion, no answer to this question, expressed quantitatively, is now possible. No reasonable person will deny that dollar devaluation *per se* must have tended in the direction of increasing the dollar wheat price. But no adequate basis, theoretical or statistical, exists for formation of judgment on the precise or even the roughly approximate extent of influence. A problem is involved of attempting to segregate and measure the effects of several sets of influences, of which the more prominent are (1) commodity circumstances peculiar to wheat; (2) commodity circumstances affecting agricultural products including wheat; (3) the influence of the purely domestic price of gold in dollars (as

contrasted with the foreign dollar price of gold) on the price of wheat; (4) what may be called inflationary circumstances, operative on wheat through the movement of the dollar in the foreign exchanges (or, conversely, through the foreign dollar price of gold); and (5) governmental controls such as operations in foreign exchange that helped to determine the position of the foreign price of gold. Merely to attempt to set forth lucidly the principal elements of the problem, to say nothing of indicating what pertinent factual material exists or does not exist, would occupy far more space than is justified here. It suffices to reiterate that the direction of influence of dollar devaluation on the dollar wheat price must have been toward increase, but that the extent of influence seems not now measurable.

V. INTERNATIONAL TRADE AND CONSUMPTION

VOLUME AND COURSE OF TRADE

The volume of international trade in wheat and flour was strikingly small in 1933-34. Shipments of 524 million bushels (Chart 14, Table XX) were much the lowest since the war; and net exports of 553 million bushels were similarly small. Shipments distinctly smaller than those of 1933-34 have been recorded in only five other years of the thirty-four that have passed in the twentieth century. The shrinkage in trade brought the level approximately to that prevailing thirty years ago. As compared with an average for three years of prosperity (1926-27 to 1928-29) in which international trade in wheat and flour attained the largest volume in history, trade in 1933-34 fell by more than 300 million bushels, roughly a third. The decline from 1932-33 to 1933-34 was 91 million bushels, or 15 per cent, as measured by shipments, and 76 million, or 12 per cent, as measured by net exports.

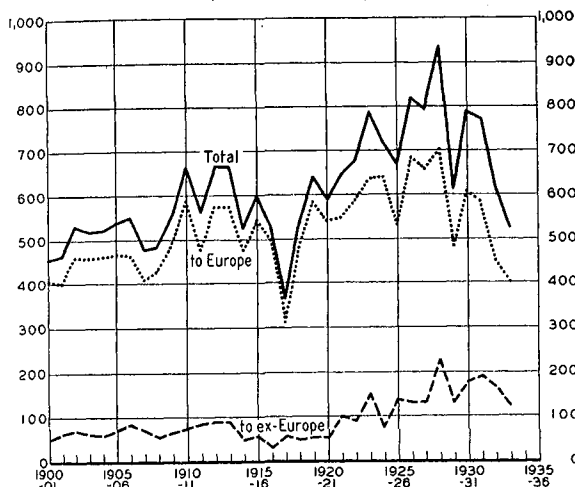
The low volume of trade in 1933-34 in the main reflected limitation of effective import demand, not shortage of exportable supplies, and probably not in an important (or even demonstrable) degree artificial restraint of the movement of wheat from exporting coun-

tries. The abundance of exportable supplies is sufficiently indicated by the fact that year-end stocks in the four major exporting countries amounted to nearly 700 million bushels, while in post-war years prior to 1928 these countries never retained stocks larger than 300 million. All evidence points to the absence of artificial restraints on exports in most exporting countries. Conceivably, indirect governmental restraint of exports from Canada and Argentina (if it existed) prevented world net exports from attaining a total moderately higher than the reported 553 million bushels, but the increase in exports that might conceivably have resulted would in the main merely have caused additional enlargement of import wheat stocks in importing countries and afloat. A very small volume of international trade in 1933-34 was practically assured if only because of the bumper wheat crop of 1933 in European importing countries, the sizable stocks carried into 1933-34 in importing Europe, and the existence and prospect for substantial maintenance of severe import restrictions in importing countries practically throughout the world.

Early forecasts of the probable volume of trade in 1933-34 took account of these prospects and ranged moderately close to the

figure finally reported, though more frequently above than below. Broomhall's first forecast of shipments, published early in August 1933, was 552 million bushels. Probable "world import demand" under the International Wheat Agreement was placed late in August at 560 million bushels. Our first forecast of probable net exports, published in September

CHART 14.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR, ANNUALLY FROM 1900-1901*
(Million bushels)



* Data from Broomhall's *Corn Trade Year Books* and *Corn Trade News*. See Table XX.

1933, was 575 million. In October 1933, the International Institute of Agriculture published a forecast of net exports of 525 million bushels. None of these early forecasts proved to be much more than 5 per cent different from the reported figures. This outcome, however, was partly fortuitous. On the one hand, crops in importing countries exceeded expectations, and, on the other, the volume of trade attained as much as 553 million bushels only because an unfavorable outlook for the European crop of 1934 (unpredictable in the autumn of 1933) stimulated import purchases and swelled the volume of trade in the closing weeks of the crop year. The range of uncertainty that has always surrounded the problem of forecasting the volume of world trade in wheat and flour in a given crop year has possibly narrowed during the past decade, but prominent uncertainties continue to persist.

Measured from its historical peak (1926-27 to 1928-29) to the low point of 1933-34, the

volume of trade reflects shrinkage in the imports of European more than of ex-European countries, and of France, Germany, and Italy particularly. In the world as a whole, only China (including Manchuria) in ex-Europe and the United Kingdom, the Irish Free State, Belgium, Denmark, Norway, and Switzerland in Europe imported more wheat in 1933-34 than in the three peak years. Of the net loss in trade of roughly 300 million bushels, some 210 million bushels represents reduction of French, German, and Italian imports; some 30 million, a reduction in Greek and Czechoslovakian imports; another 30 million, a reduction in Japanese, Egyptian, and South African imports; and the balance, a reduction of imports of numerous other countries both in Europe and ex-Europe. Governmental measures tending to restrain wheat imports (directly or indirectly, whether designed primarily to foster national self-sufficiency and protect currencies, gold reserves, or trade balances, or to protect domestic wheat producers from the impact of low international wheat prices) loom large as an outstanding cause of this reduction in the trade in wheat. But even the cumulative effects of these measures, important as they were, would not have sufficed to bring the imports of 1933-34 so low in the absence of weather conditions exceptionally favorable to European wheat crops in both 1932 and 1933. The huge wheat crops of importing Europe in the past two years no doubt reflect stimuli to acreage expansion and intensity of cultivation provided by the preferential prices accorded to wheat through governmental action; but they also reflect exceptionally favorable weather. Over the five-year period since 1928-29, the decline in international trade in wheat reflects an impressive combination of adverse commodity influences, adverse general influences, and governmental efforts to mitigate nationally the effects of these adverse influences, which nevertheless have tended to discourage consumption by according differential prices to wheat products, with repercussion upon imports.

The shrinkage in the volume of international trade between 1932-33 and 1933-34, amounting to 91 million bushels as measured

by shipments or 76 million as measured by net exports, represented mainly reduction in the imports of France, Czechoslovakia, and Greece in Europe, and of China in ex-Europe. The net imports of these four countries were 70 million bushels smaller in 1933-34 than in 1932-33. In other countries, changes in the volume of net imports were small (Table XXII). Since all eleven of the countries (Manchuria excepted) wherein imports were reduced more than 2 million bushels were also countries which harvested much larger wheat crops in 1933 than in 1932, the general reduction of imports between 1932-33 and 1933-34 must be attributed mainly to enlargement of domestic supplies rather than to further tightening of import restrictions. Except in Holland and Austria, increases in domestic crops substantially exceeded reductions in net imports. The general economic situation was more favorable in most countries in 1933-34 than in 1932-33; but not to an extent sufficient to offset the adverse effects of the commodity position on international trade in wheat.

Trade in wheat flour, unlike that in wheat grain or in wheat and flour together, was larger in 1933-34 than in 1932-33 (Table XXIII), though otherwise the smallest in many years. The increase in net flour exports from net-exporting countries was small—less than half a million barrels—but was the first increase on record since 1928-29. It was, however, largely the effect of dumping and subsidization. Enlargement of the market occurred principally in the United Kingdom, where net imports of flour were the largest in more than a decade, and more than 1,500 thousand barrels larger than in 1932-33. A substantial part of this increase represented importation of low-grade flour from France and Germany, presumably for feed use. Less important increases in net imports occurred in Austria, Belgium, and Brazil; most other countries reduced their takings. Among the exporting countries, the largest reductions of flour net exports occurred in Australia, Japan, and the United States; the largest increases in Germany, Argentina, and Hungary. German flour net exports increased more than 1,700 thousand barrels, and Germany rose from

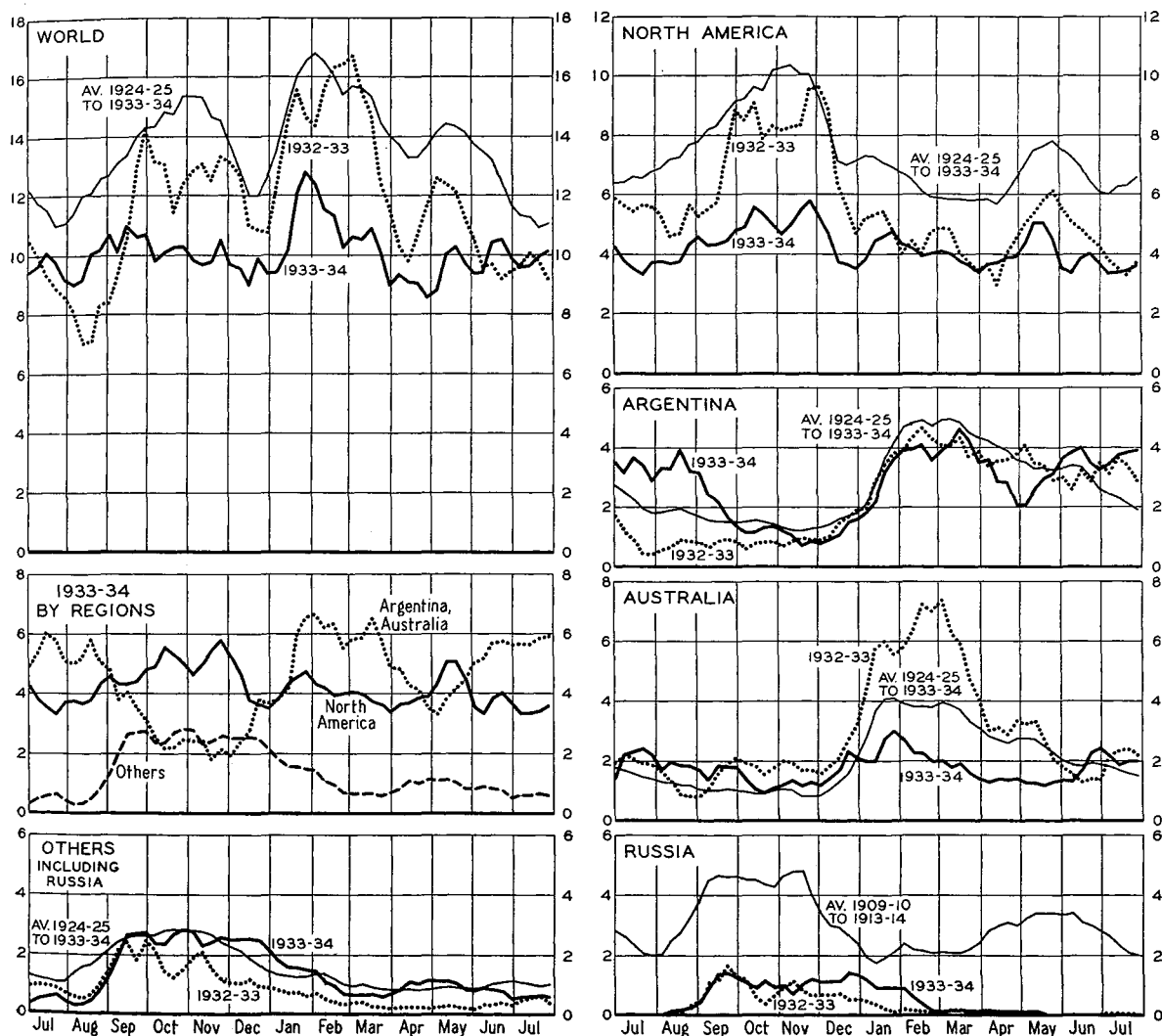
sixth to fourth rank among the net flour-exporting countries of the world. Expansion of Brazilian flour imports and Argentine flour exports represented removal of the Brazilian embargo on flour imports, which had prevailed from August 1931 to February 1933, following exchange of coffee for stabilization wheat from the United States.

The course of international shipments of wheat and flour from week to week in 1933-34 (Chart 15) was notable mainly because the usual seasonal rise during September-October failed to appear, and because an increase instead of the usual seasonal decline occurred in May-July. The failure of shipments to increase during September-October was a reflection of over-shipment in relation to import demand in preceding weeks, when Argentina and Australia in particular were disposing of heavy year-end stocks. By the end of September, stocks afloat to Europe and in British ports were at a level undoubtedly high for a year when import requirements were known to be small. When in September-October the shipments from the Southern Hemisphere began to decline as exportable stocks were reduced, the accumulation of stocks in and afloat to Europe helped to create too narrow an import market to permit Canadian exports to rise as much as usual (especially with the existing position of the Winnipeg future), unless stocks afloat and in European ports should be forced to extremely high levels. Throughout October-December the policy of European importers quite clearly was to draw down stocks afloat and arrived, while awaiting the receipt of new-crop wheat from the Southern Hemisphere. In the absence of a November peak of shipments, there was naturally less than the usual November-December decline. The course of shipments from mid-December to mid-May differed relatively little from the average seasonal course, though the holding policy that developed among Australian farmers tended to delay the definitive seasonal rise of total shipments in late December and early January. The contra-seasonal increase in shipments from mid-May to the end of the crop year reflected expansion of import demand, based primarily upon unfavorable prospects for the 1934 wheat crop in Europe and

rising prices. Argentina and Australia rather than the United States and Canada—all four countries held heavy stocks in early May—chose to enlarge their exports when this moderate improvement of import demand permitted.

half of the crop year and enlarge them in the second half. Such import controls granted, the major divergencies of the course of trade in 1933-34 from the average course seem explicable by reference to fluctuations in import demand and to circumstances of crops, stocks,

CHART 15.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR, 1933-34, WITH COMPARISONS*
(Million bushels; 3-week moving average)



* Broomhall's weekly data from *Corn Trade News* and *Corn Trade Year Books*. Averages are for periods ending July 1934 and July 1914.

To what extent governmental actions affected the course of shipments it is impossible to say. Existing import controls clearly tend to enforce the fullest possible utilization of domestic wheats early in the crop year, and thus to reduce shipments in roughly the first

and prices in exporting countries rather than to governmental controls of exports. No one can say, however, what the course of shipments might have been in 1933-34 if Canadian officials had chosen to permit Winnipeg prices fully to reflect the pressure of Canadian sup-

plies; if United States officials had sponsored subsidized export of more or less wheat; if Russian officials had decided upon smaller or larger exports; or if Argentine officials had followed a different policy with regard to selling or holding accumulated stocks.

IMPORTS AND CONSUMPTION

Importing Europe.—The net imports of Europe ex-Danube ex-Russia in 1933-34, as we have seen, fell to a new post-war low level. The reduction between 1932-33 and 1933-34 was 46 million bushels if measured by reference to the net imports of net-importing countries within this area, and 55 million if from this sum deduction is made of the net exports of Poland, Spain, and Lithuania in both years and of Germany in 1933-34. The reduction in net imports did not involve reduction in total supplies (initial stocks plus new crops plus net imports), or in total consumption (total supplies minus estimated year-end stocks, as indicated by the dotted line "adjusted disappearance" in Chart 16). Total supplies (Table XXXI) in importing Europe were about 100 million bushels, or 5 per cent, larger in 1933-34 than in 1932-33, and indeed the highest on record by a substantial margin. Total consumption was about 40 million bushels larger than in 1932-33, and slightly the highest on record. A little less than half of the increase in total supply therefore went toward increase of consumption, somewhat more than half toward increase of stocks, bringing these to a new high level at the end of the crop year. But consumption would undoubtedly have been higher if prices had been allowed to reflect the heavy supplies.

Neither the decline in net imports, the increase in consumption, nor the increase in year-end stocks that appears in the aggregates shown in Chart 16 was reflected in data pertaining to all of the twenty-one European countries included in the totals. Chart 17 presents pertinent data for the four principal wheat-consuming countries separately, and for the other countries divided into two groups, one lying in western Europe and the other in eastern Europe.

The outstanding reductions of net imports occurred in France, Czechoslovakia, Greece,

and Holland, and reflected good yields in 1933 and the cumulative effects of governmental measures which have protected domestic producers and encouraged domestic production, rather than imposition of fresh barriers to imports. The outstanding increases of consumption occurred in France, as the result

CHART 16.—WHEAT SUPPLIES AND DISAPPEARANCE IN IMPORTING EUROPE, FROM 1922-23*

(Million bushels)



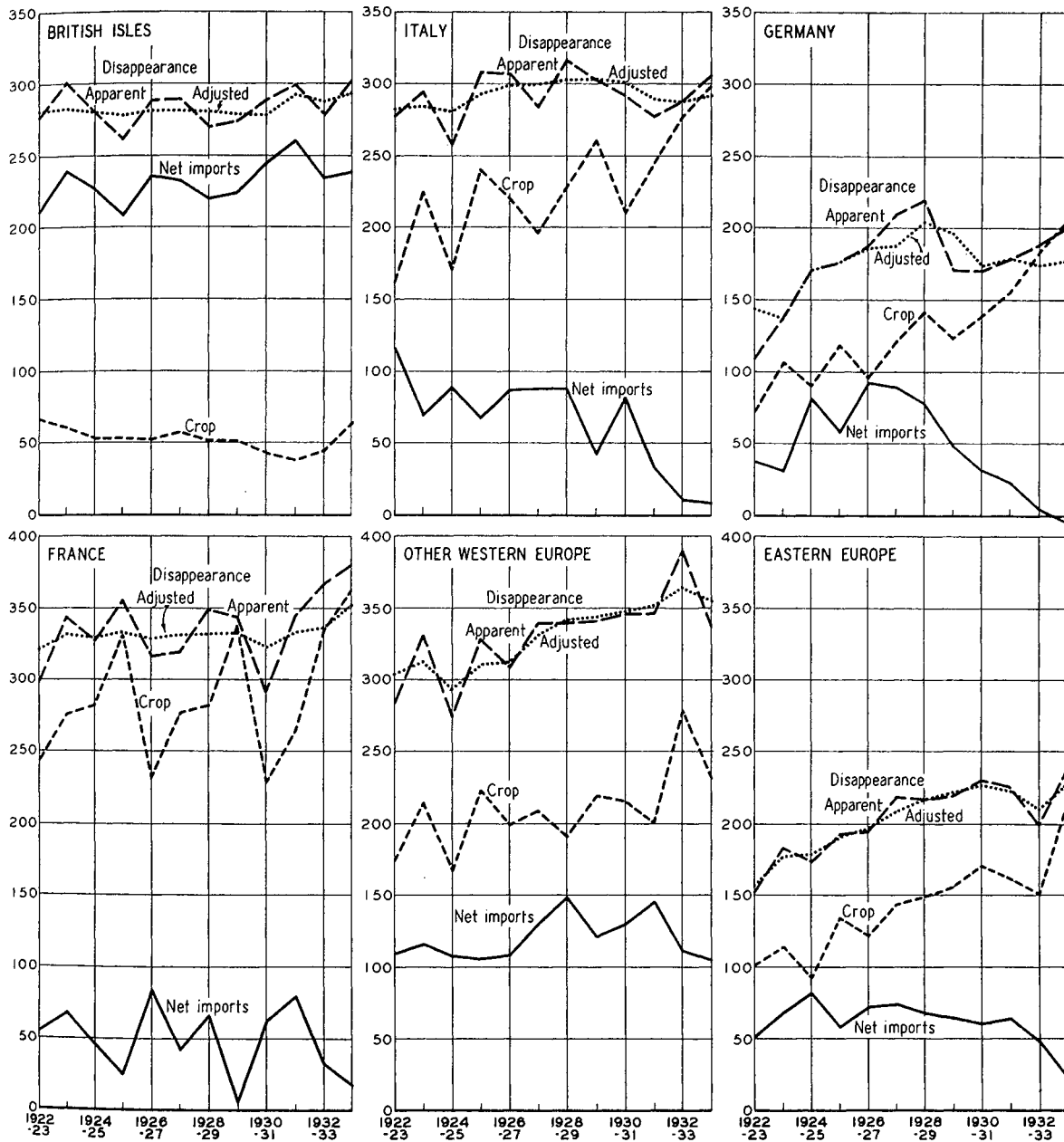
* Data from Table XXXI. The dotted line represents crop plus net imports adjusted for our estimates of changes in stocks.

of governmental measures designed to reduce a domestic surplus, and in Poland, as the result of adjustment of domestic consumption to a short crop in 1932 and an abundant crop in 1933.

Net imports into the British Isles were well maintained in 1933-34, ranking as the fourth largest in the past twelve years. Among the six countries and regions of importing Europe shown in Chart 17, the British Isles alone took larger imports in 1933-34 than in 1932-33 in the face of a larger domestic crop in 1933 than in 1932. Consumption was heavy, but for feed rather than for food; a good deal of cheap low-grade wheat and flour was im-

CHART 17.—WHEAT SUPPLIES AND DISAPPEARANCE IN PRINCIPAL EUROPEAN IMPORTING COUNTRIES AND AREAS, FROM 1922-23*

(Million bushels)



* Data from Tables II, XXII, XXX. Dotted lines represent crop plus net imports adjusted for our estimates of changes in stocks. "Other western Europe" includes Scandinavia, Spain, Portugal, Belgium, Holland, Switzerland. "Eastern Europe" includes Austria, Poland, Czechoslovakia, Greece, Finland, Estonia, Latvia, Lithuania.

ported from Germany and France. Wheat imports from Canada and Australia were relatively small and from Argentina relatively large. In its second year of operation, the preferential tariff imposed by the United

Kingdom against non-Empire wheat was more than offset in its effects upon imports by price relationships dependent upon the greater relative willingness in Argentina than in Canada and Australia to sell wheat at low prices.

The British price-supplementing subsidy accorded for the second year to domestic wheat producers tended somewhat further to stimulate wheat acreage; but the stimulus was less effective on the acreage sown for 1934 than it had been on the sowings for the 1933 crop. Despite Empire preference, the price-supplementing subsidy to domestic producers, and the levy on flour, the British system of enhancing returns to farmers has thus far left the channels of wheat disappearance open and has not greatly stimulated domestic production. Hence the level of imports, though doubtless adversely affected, has not been reduced drastically.

In Italy, on the other hand, domestic wheat production has risen so rapidly in response both to governmental measures and to natural forces that the wheat crop of 1933 was larger than the requirements for consumption in the two crop years preceding 1933-34. All of the three past crop years have been characterized by relatively low levels of consumption; and this is undoubtedly due to governmental protection accorded to wheat prices without corresponding protection to its principal substitute, corn. The wheat crop of 1933 was so large that imports of 1933-34 fell below 10 million bushels for the first time in more than half a century, though the reduction from 1932-33 was moderate. Apparently consumption expanded only slightly in response to larger supplies and lower prices; and stocks were built up substantially in the course of the year. The forms of governmental wheat controls—high tariffs, milling quotas, and loans to co-operatives to encourage wheat storage—were not appreciably altered during 1933-34, though quotation of domestic cereal prices on exchanges dealing in futures was suspended from March 5, 1934. The wheat tariff remained unchanged in level, but milling quotas were somewhat higher than ever before, amounting, after November 21, 1933, to practical prohibition of the use of foreign wheat in mill mixes. It was necessary toward the end of the crop year, with the advent of the 1934 crop, to compel the admixture of high percentages of stored old-crop wheat with new wheat in mill mixes. Under the burdensome supplies and in spite of protection,

Italian prices fell to the lowest level in a decade (though remaining high in relation to world prices). But resort to surplus-reduction measures never became necessary.

The burden of a domestic crop in excess of consumption in immediately preceding years was felt also in Germany during 1933-34; and for the first year in more than half a century the country ranked as a net exporter of wheat and flour. For the fourth successive year consumption was relatively light (in large part another instance of differentially high wheat prices); and by the end of the year stocks had been built up to a level probably unprecedentedly high. A régime of fixed prices (to producers after October 1, 1933, and in effect to middlemen after April 1, 1934) was inaugurated. Supporting devices were the high tariff and the milling quota, which remained substantially unchanged from the preceding year; governmental purchases in support of prices; and (a new device) strict control of milling operations, including especially requirements that mills must carry stocks in proportions specified officially. Little difficulty seems to have been experienced in maintaining prices, in spite of the heavy surplus, and in part because the unfavorable development of grain crops in the spring of 1934 foreshadowed general shortage of domestic grain in 1934-35. German exports were concentrated in the first half of the crop year, and were made possible through the export certificate system, by which domestic wheat is in effect exchanged for imported hard wheat equal in quantity and free or nearly free of duty. Under this system, both exports and imports were much larger than the *net* export statistics suggest, and foreign wheat was a far more important constituent of flour than in Italy. Net exports from Germany, where wheat prices in 1933-34 stood far above the international level, were possible only because some wheat export certificates were outstanding when the year closed, while others (from March 8 to July 31) were permitted to be used to bring in imports of feed barley and of corn duty-free; under this adaptation, the export certificate system became in part a wheat export subsidy. It is not clear to what extent rationing

of foreign exchange tended to curtail wheat imports.

The French crop of 1933 was close to 10 per cent larger than requirements for consumption in any year of the past decade. Added to a heavy inward carryover, it presented a wheat-surplus problem, acute partly because of political ramifications. This problem, in less acute form, had existed in 1932-33. Governmental controls then included a high import duty and practically prohibitive milling quotas; also governmental purchase and storage on a small scale and (for a brief period only) regulation of milling extraction in such a way as to reduce the amount of flour and enlarge the amount of offals produced from a given quantity of wheat. Such controls were maintained in 1933-34; and in addition, premiums were paid for denaturing wheat, exports were accorded a bounty (in the first quarter), farmers were forbidden to plant wheat on land planted for the crop of 1933,¹ governmental financing of storage was enlarged, and prices to producers were fixed. The system appears to have resulted in substantial enlargement of consumption despite high prices, but this expansion did not suffice to prevent enlargement of year-end stocks to a level unprecedentedly high. Enlargement of consumption in France goes far to explain the enlargement of consumption in Europe ex-Danube ex-Russia as a whole. The pressure of domestic supplies made evasion of the price-fixing law common, especially toward the close of the crop year. Net imports were made in 1933-34 only because wheat continued to be admitted duty-free from the northern African colonies. The reduction in French net imports between 1932-33 and 1933-34 was one of the three largest reductions recorded in importing European countries.

There was little reduction of net imports into other countries of western Europe. Among the seven countries included in this group, Spain was a net exporter on a very small scale as in 1932-33; and in Spain, the significant changes were not in trade but in

wheat production and consumption, both of which were smaller in 1933-34 than in 1932-33. Because of a heavy inward carryover, Portugal had abundant supplies in spite of a reduced crop, and net imports (admitted as usual only on permit) were further curtailed, though only slightly. Denmark, Norway, Belgium, and Switzerland rank as countries where import restrictions are relatively mild in fact if not in form, and where domestic crops, not yet expanded significantly by the stimulus accorded through such protection as is granted, were not strikingly large in 1933. Consequently their imports were well maintained. In Holland, however, the introduction of protective measures culminating in 1933-34 in inauguration of an import monopoly and an import tax in addition to milling quotas previously employed resulted in notable expansion of domestic production, a sharp reduction of net imports, and presumably a reduction in the amount of wheat used for feed, which is always substantial. This group of western European countries stood alone among the six areas shown in Chart 17 as one wherein domestic wheat crops were smaller in 1933 than in 1932, and wherein consumption was reduced. The dominant changes occurred in Spain and therefore were little reflected in trade statistics.

In the sixth group, including central European countries ex-Germany, the aggregate wheat crop of 1933 for the first time approached normal requirements for consumption, and as a result net imports were more sharply reduced than in any other region of Europe. Among the eight countries included in this group, Poland was again (for the fifth successive year) a net exporter, though as usual because of governmental subsidy rather than adjustment of domestic prices to an export basis. Lithuania was also a net exporter, for the fifth successive year, but on a small scale. Latvia and Estonia, near self-sufficiency in wheat in 1932-33, practically achieved that status in 1933-34 but had not yet become net exporters. Finland alone among the other four countries imported more wheat in 1933-34 than in 1932-33, but only a little more. There were large reductions of net imports into Czechoslovakia and Greece,

¹ This requirement, legalized in December 1933, could scarcely have affected winter wheat sown for the 1934 crop; and winter wheat constitutes the great bulk of the French wheat acreage.

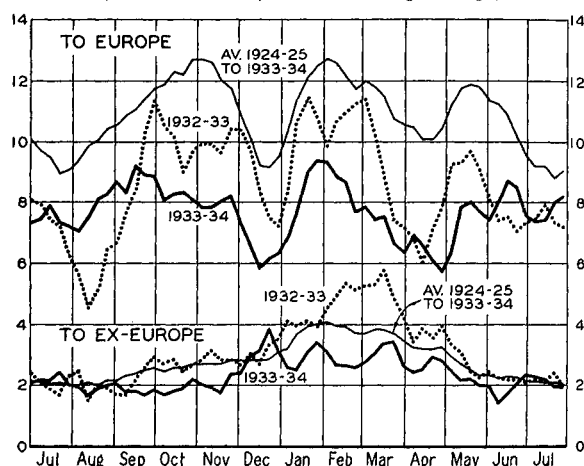
and a small reduction of Austrian imports. Both Czechoslovakia and Greece had record wheat crops in 1933-34, and the reduction of net imports reflected use of domestic wheat (enforced by high import duties, milling quotas, and practical monopoly control of imports) rather than reduction of consumption. Supplies were so abundant in Czechoslovakia that the country was practically self-sufficient in wheat in 1933-34, and stocks were heavy when the year closed. The increase of consumption in central Europe between 1932-33 and 1933-34 represents principally expansion in Poland, where consumption tended to adjust itself to a short crop in 1932 and a large crop in 1933.

Ex-Europe.—The outstanding development in ex-European trade was a reduction of 34 million bushels in the net imports of China (excluding Manchuria), from a distinctly high level of 55 million bushels in 1932-33 to a moderately low level of 21 million bushels in 1933-34.¹ This reduction, the largest recorded for any importing country of the world, reflected principally the joint effects of a larger domestic wheat crop in 1933 and imposition of an import duty on wheat equivalent to 6 pre-devaluation gold cents per bushel after December 15, 1933, and increase on this date in the duty on flour first imposed in May 1933. The importation of wheat on government account probably tended to discourage imports on private account; so also did declining domestic commodity prices and indications of business recession in China. Around half of the Chinese imports represented governmental purchases of subsidized wheat and flour from the United States. As compared with 1932-33, China took much more wheat from the United

States, much less from Australia, and considerably less from Canada. The data on Argentine shipments to China suggest a reduction in Chinese takings from this source, first prominent in 1932-33; but Chinese net-import statistics for July-June suggest a substantial increase.

Almost solely because of the reduction of Chinese takings, the total volume of shipments to ex-Europe (shown weekly in Chart 18) was lower in 1933-34 than in 1932-33. Reduction of ex-European trade from the ten-

CHART 18.—SHIPMENTS TO EUROPE AND TO EX-EUROPE, 1933-34, WITH COMPARISONS*
(Million bushels; 3-week moving average)



* See note to Chart 15.

year average, however, reflected curtailment in the takings not so much of China (including Manchuria) as of Japan, Egypt, South Africa, India, and the West and East Indies. The first three of these have built up protective systems similar to those common in Europe, with similar results upon domestic wheat production and upon net imports. Indian takings, large in 1928-29, have dwindled since import duties were imposed. Various tropical and subtropical countries, including the West and East Indies, have reduced their takings largely because of reduced purchasing power of export commodities.

Aside from China, most ex-European countries appear to have imported about as much wheat and flour in 1933-34 as in 1932-33. The largest single reduction was perhaps in Chilean imports (about 2 million bushels);

¹ Data of the International Institute of Agriculture for August-July crop years; comparable figures for earlier crop years are not available. Broomhall's shipments to China and Japan show a reduction of 44 million bushels, from 92 million bushels in 1932-33 to 48 million in 1933-34. Since Japanese net imports were about 4 million bushels in both years, Broomhall's data suggest a reduction in Manchurian imports, but such a reduction cannot be verified in the absence of Manchurian import statistics, and the inference that reduction occurred in the face of a reduced Manchurian crop may rest merely upon discrepancies that always appear between measures of ex-European trade referring respectively to shipments, exports, and net imports.

this reflected enlarged outturn of wheat in a country normally a net exporter of wheat. Net imports into Japan, Egypt, South Africa, and New Zealand, already very small in 1932-33, were but little reduced in 1933-34, though the tendency was toward reduction rather than enlargement. A few regions—Brazil, the East Indies, and the West Indies—appear to have imported a little more wheat and flour in 1933-34 than in 1932-33.

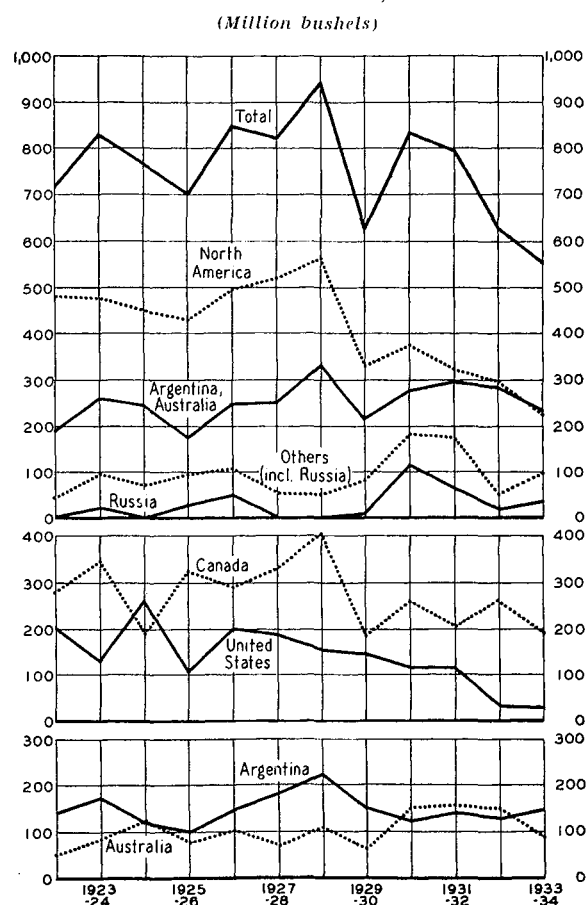
Little can be said of consumption in ex-European countries. There was probably expansion in Japan, where the domestic crop was large, though not to the level prevailing before 1932-33. There was probably contraction in Egypt, where the 1933 crop was below average and stocks were drawn down. Developments in China are obscure in the absence of estimates of domestic production and year-end stocks. Elsewhere consumption seems unlikely to have suffered further reduction in 1933-34, though pre-depression levels can hardly have been attained.

EXPORTS AND DOMESTIC USE

The unprecedentedly low post-war volume of total world trade in wheat and flour during 1933-34 was not equally reflected in exports from the several sources of supply. Among the six countries or groups for which data are summarized in Chart 19, only the United States exported less (net) than in any year of the preceding decade. Canadian exports had twice been smaller, though by so narrow a margin that, with United States exports at a new low level, North American exports for the first time fell below exports from the Southern Hemisphere. Australian exports had been smaller in three years of the preceding decade, Argentine in six, Russian in seven, "others" in four. These relationships suggest that in general importing countries have tended year by year since 1928-29 to draw their shrinking requirements less from North America and more from other sources of supply; or, conversely, that North America rather than other exporting countries has tended to hold stocks when the outlet for exports is narrow. This tendency was again perceptible in 1933-34, though manifestation of the customary Australian and

Argentine export behavior—to ship rather than hold surpluses—was not unmistakably clear until reinforced by shipments heavy in relation to the usual seasonal outflow in August–December 1934. By the end of their proper crop years, the Southern Hemisphere exporters had as usual practically cleared their 1933 surpluses, though rather heavy stocks remained in Australia even by December 1, 1934.

CHART 19.—NET EXPORTS OF WHEAT AND FLOUR FROM PRINCIPAL EXPORT AREAS, FROM 1921-22*



* See Table XXII.

In the main, therefore, there was little unusual in the distribution of net exports between the contributing countries in 1933-34, within the limits imposed by import demand and aside from delay in the out-shipment of Southern Hemisphere surpluses. As would be expected, those countries which harvested larger crops in 1933 than in 1932

tended to export more heavily in 1933-34 than in 1932-33; those which harvested smaller crops tended to export less heavily; and, broadly, North American exports as usual tended to be adjusted to the outlet remaining after other countries had shipped out their surpluses. The general principles which have governed the distribution of net exports between contributing countries in recent years were again in evidence in 1933-34.

Such general principles, however, seldom serve adequately as a basis for early-season forecasts of the probable distribution of exports; and in this respect 1933-34 was not an exceptional year. Our second forecast of net exports by sources in 1933-34, published in January 1934, compares as follows with reported net exports, in million bushels:

Country	Forecast	Reported
United States	40	29
Canada	215	194
Argentina	110	147
Australia	105	86
Russia	30	34
Danube ^a	35	35
Others	15 ^b	28 ^c
<hr/>		
Total	550	553

^a Hungary, Yugoslavia, Rumania, Bulgaria.

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

^c Algeria, Morocco, Poland, Spain, Germany.

This tabulation serves to emphasize unexpected developments in international trade, for which general principles provide little guide. Reported exports from the Danube countries and Russia were close to the forecast; exports from these sources are usually predictable within a fairly narrow margin of error once their exports of the first few months of the crop year are known, as is true in January. Reported exports from the United States, Australia, and Canada fell substantially below forecasts. The forecast of United States net exports rested partly upon the assumption that the quantity of exports actually subsidized would come nearer to the 35 million bushels officially contemplated in and before January 1934; and also upon the assumption (for which no precedent existed) that ordinary commercial exports could be held nearer than they were to the level of 1932-33 even with Chicago prices continuing

far out of line with Liverpool. The forecast of Australian net exports, which might under the usual export behavior have proved too low despite the quota allotted under the Wheat Agreement, in fact proved too high because a strong tendency developed among Australian farmers to retain ownership of their wheat. This proved, as we have seen (p. 147), to be a development that relieved the government of the necessity of putting into operation the export-licensing device for holding exports within quota limits. It was one of three outstanding unexpected occurrences bearing on international trade to appear in the crop year; and it tended (within the crop year but not in subsequent months) to weaken the general rule upon which the January forecast was based—that Australia can be counted upon to export more freely than the United States and Canada.

The forecast of Canadian exports proved too high principally because, calculated as it must be in January with reference to the gap in world import demand that remains for Canada to fill after other exports are calculated with reference to general principles of export behavior, including seasonal outflow, that gap was set too wide on the assumption that predicated Argentine exports and exports from the minor countries ("others") would not exceed 125 million bushels.

The forecast of Argentine exports was based upon the assumption that the export quota allotted under the International Wheat Agreement would be utilized to the full but not exceeded—an assumption which would not have appeared tenable in January if the full size of the Argentine crop of 1933 and the resulting surplus problem of January–August had then been convincingly apparent. The eventual emergence of a near-record crop in Argentina was the second outstanding unexpected development bearing on international trade to appear during the crop year. The forecast of net exports from "other" countries was too low partly because in January Germany still seemed likely to balance imports against exports or to import net on a small scale rather than export net, and would have done so in the absence of unforeseen changes in governmental regulations; partly also because Al-

gerian and Moroccan net exports, further stimulated by the opportunity to enter the highly protected French market free of duty, were tardily reported by the principal reporting agencies, so that their approximate size did not become apparent until fairly late in the crop year.¹ The eventual recording of a record volume of exports from Algeria and Morocco, in spite of domestic wheat crops little above average in size, was the third outstanding unexpected development concerning exports in 1933-34.

These unexpected developments, while not of much importance in the problem of forecasting the total volume of trade in a year of abundant total exportable surpluses, illustrate difficulties likely to arise in any system of international control of exports similar in rigidity to that adopted under the International Wheat Agreement of 1933. Quite clearly, such unexpected occurrences may ease the problem of governmental control of exports in one country (as in Australia in 1933-34); or in another country (as in Argentina in 1933-34) they may create internal pressures with which the government cannot adequately deal and simultaneously execute its external commitments. The uncertainties that surround prediction of net exports from a single country continue to be more prominent than those (themselves not unimportant) that surround prediction of the total volume of trade, and loom even larger in importance if and when international control

of exports involves assignment, acceptance, and adherence to maximum export quotas.

In a special sense of the word "subsidy," wheat and flour net exports in 1933-34 were "subsidized" to an extent previously without precedent. Wheat producers in practically all exporting countries—Canada was the conspicuous exception—were accorded government aid in one form or another and in such a way that their average return per unit of wheat exceeded the import price of their wheat minus the inclusive cost of transportation to import markets. All of the Danubian, Polish, and German net exports were subsidized in this sense of the word; practically all of the American; most of the Australian, on account of continuation of governmental payments to producers on the crop of 1933; much of the Argentine, on account of governmental purchase of new-crop wheat at the fixed price during December-May, with resale to exporters at a lower price; and presumably all of the Russian, though internal prices in Russia have no direct relation to prices elsewhere. In Canada, the aid to producers took the form of maintenance of an exceptionally large premium on Canadian wheat over competing wheats in the import market. If the term "subsidization of exports" be extended to cover all wheat exports shipped out of countries wherein direct or indirect governmental assistance was accorded to wheat producers, then the world trade in wheat and flour was almost in its entirety a subsidized trade, the outstanding exception being Argentine exports in the early months of the crop year. Nevertheless governmental interventions in exporting countries affected the total volume of trade little if at all, and the distribution of exports only moderately so far as can be judged from the relation of reported exports to exports reasonably to have been expected in the light of existing surpluses and requirements and of general circumstances outside of governmental interventions that have conditioned the distribution of exports in past years.

Outstanding developments in domestic disappearance of wheat in exporting countries² in 1933-34 were confined to the Danube basin and the United States. Danubian supplies

¹ Broomhall did not report shipments from northern Africa in 1933-34 (an important reason why world net exports exceeded world shipments by an unusually large margin); and the International Institute of Agriculture was apparently unable to report official Moroccan export statistics covering more than the first two months of the crop year until April 1934.

² Excluding Russia, for which reliable data are not available, though the big crop of 1933 and the moderate exports point toward heavy consumption as well as some increase of stocks; also Poland, Germany, and Spain, wherein disappearance was large in the first and small in the other two (see pp. 168-70); also Algeria and Morocco, where heavy exports from moderate crops must have given rise to small disappearance, and Tunis (a small net importer in 1933-34), wherein disappearance may have been rather large; and India, wherein a crop above average in size and insignificant exports probably kept disappearance at a relatively high level, though lower than in the three preceding years.

were so large (from crop rather than inward carryover, which was small) that, with moderate exports, more wheat remained for domestic use and outward carryover than in any other post-war year. Roughly 25 million bushels of this abundant supply went to replenish stocks, which indeed seem to have been built up to a high level, though by no means so high as in 1929 (Table XII). More wheat, however, went for increase of consumption, to a new high level in accordance with a persistent upward post-war trend. The increase in consumption from 1932-33 (when it was exceptionally low following short crops in Yugoslavia and Rumania, to which consumption was adjusted) was roughly 75 million bushels, an amount nearly double the increase of consumption in importing Europe (Chart 16, p. 166). Because this striking increase in Danubian consumption coincided with a substantial increase elsewhere in Europe ex-Russia, the increase in consumption in Europe ex-Russia as a whole, some 115 million bushels, was the largest in at least a decade. It exceeded in magnitude the striking decline that occurred in 1932-33.

The increase of consumption in Europe ex-Russia, however, was more than offset by a decline of consumption in the four major exporting countries (Table XXXI). There was very little change in domestic disappearance in Argentina and Australia, where the level was relatively high; or in Canada, where the level was relatively low so far as available approximate measurements indicate. Most of the reduction of consumption of wheat in the major exporting countries occurred in the United States. Official statistics for July-June crop years (Table XXIX) point toward reduction of some 50 million bushels in feed use alone, mainly the reflection of a wider

spread between wheat and corn prices than prevailed in the three preceding years of heavier feed use. There was some decline in seed use because the area sown for the crop of 1934 was smaller than the area sown for the crop of 1933. Wheat ground into flour was substantially reduced, probably by an amount nearer to the large reduction in feed use than to the small reduction in seed use, though close measurement depends upon the processes of estimating net retention of flour, to which some uncertainties attach (see p. 138). Since flour stocks were reduced, the reduction in wheat ground and retained domestically was larger than the reduction in the wheat equivalent of flour consumed.

The net effect on world ex-Russian wheat disappearance (Table XXXI) of increase in Europe and reduction in the United States was to hold the total for 1933-34 close to the level of 1932-33. In both years the totals were substantially smaller than in 1930-31 and 1931-32, mainly because feed use in the United States was much smaller in 1933-34 and food use in Poland, Yugoslavia, and Rumania was exceptionally small in 1932-33. Recovery of food use to more normal levels in the three European countries in 1933-34, and reduction of feed use in the United States, made the crop year 1933-34 less exceptional than 1932-33 with reference to consumption of wheat in different countries throughout the world. From the point of view of reduction of the world wheat surplus, it was particularly unfortunate that in 1933-34 feed use in the United States and shipments to China could not have been held to the level of 1932-33. These two channels of disappearance alone absorbed nearly 100 million bushels more wheat from the world ex-Russia in 1932-33 than in 1933-34.

This study is the work of M. K. Bennett and Helen C. Farnsworth, with the advice of Alonzo E. Taylor

APPENDIX

TABLE I.—WHEAT PRODUCTION, ACREAGE, AND YIELD PER ACRE IN PRINCIPAL PRODUCING AREAS, 1924-33*

Year	World ex-Russia ^a			Four chief exporters					India	North- ern Africa ^b	Europe ex-Russia			USSR	World includ- ing Russia
	Total	North- ern Hemi- sphere	South- ern Hemi- sphere	Total	United States	Can- ada	Aus- tralia	Argen- tina			Lower Danube ^c	Other Europe	Total		
A. PRODUCTION (million bushels)															
1924	3,055	2,652	403	1,458	840	262	165	191	361	51	204	853	1,057	...	....
1925	3,302	2,946	356	1,370	669	395	115	191	331	68	296	1,100	1,396	785	4,087
1926	3,364	2,924	440	1,632	834	407	161	230	325	57	294	922	1,216	914	4,278
1927	3,580	3,118	462	1,755	875	480	118	282	335	60	272	1,002	1,274	797	4,377
1928	3,903	3,337	567	1,989	913	567	160	349	291	69	367	1,042	1,409	807	4,710
1929	3,424	3,070	354	1,417	822	305	127	163	321	77	303	1,146	1,449	694	4,118
1930	3,705	3,214	491	1,757	890	421	214	232	391	64	353	1,006	1,359	989	4,694
1931	3,669	3,206	463	1,664	932	321	191	220	347	69	370	1,064	1,434	786	4,455
1932	3,699	3,191	508	1,642	744	443	214	241	337	75	222	1,268	1,490	744	4,443
1933	3,599	3,069	530	1,258	528	270	174	286	353	70	371	1,378	1,749	1,019	4,618
Average															
1928-32 ...	3,680	3,204	477	1,694	860	411	181	241	337	71	323	1,105	1,428	804	4,484
1909-13 ...	2,998	2,721	277	1,125	682	197	91	147	352	58	330	1,016	1,346	757	3,755
B. ACREAGE (million acres)															
1924	215.2	185.2	30.0	101.4	52.5	22.1	10.8	16.0	31.2	7.2	18.1	49.3	67.4	....	....
1925	218.1	186.7	31.3	101.0	52.4	20.8	10.2	17.6	31.8	7.9	18.5	50.8	69.3	61.5	279.6
1926	227.4	193.2	34.2	110.4	56.8	22.9	11.7	19.0	30.5	8.1	18.7	51.3	70.0	73.9	301.3
1927	233.3	196.8	36.5	114.6	59.6	22.5	12.3	20.2	31.3	7.2	18.9	52.4	71.3	77.4	310.7
1928	241.4	200.2	41.1	120.5	59.2	24.1	14.8	22.4	32.2	8.3	19.6	51.8	71.4	68.5	309.9
1929	239.2	204.1	35.0	119.5	63.3	25.3	15.0	15.9	32.0	8.5	18.3	51.7	70.0	73.5	312.7
1930	248.3	206.5	41.8	125.3	62.7	24.9	18.2	19.5	31.7	8.9	20.0	53.6	73.6	80.5	328.8
1931	240.1	204.7	35.4	114.0	57.1	26.2	14.7	16.0	32.2	8.2	20.9	55.0	75.9	92.1	332.2
1932	245.1	207.3	37.8	118.0	57.2	27.2	15.8	17.8	33.8	8.8	18.8	56.5	75.3	85.5	330.6
1933	235.8	198.1	37.6	106.2	47.5	26.0	15.0	17.7 ^d	33.0	9.0	19.8	58.0	77.8	82.1	317.9
Average															
1928-32 ...	242.8	204.6	38.2	119.5	59.9	25.5	15.7	18.3	32.4	8.5	19.5	53.7	73.2	80.0	322.8
1909-13 ...	196.1	170.9	25.2	79.5	48.1	9.9	7.6	14.9	29.2	6.5	19.6	53.2	72.8	74.0	270.1
C. YIELD PER ACRE (bushels)															
1924	14.2	14.3	13.4	14.4	16.0	11.8	15.2	12.0	11.6	7.1	11.3	17.3	15.7	....	....
1925	15.1	15.8	11.4	13.5	12.8	19.0	11.2	10.8	10.4	8.7	16.0	21.7	20.1	12.8	14.6
1926	14.8	15.1	12.9	14.8	14.7	17.8	13.8	12.1	10.7	7.0	15.7	18.0	17.4	12.4	14.2
1927	15.3	15.8	12.6	15.3	14.7	21.4	9.6	14.0	10.7	8.4	14.4	19.1	17.9	10.3	14.1
1928	16.2	16.7	13.8	16.5	15.4	23.5	10.8	15.6	9.0	8.2	18.8	20.1	19.7	11.8	15.2
1929	14.3	15.0	10.1	11.9	13.0	12.1	8.5	10.2	10.0	9.1	16.5	22.2	20.7	9.4	13.2
1930	14.9	15.6	11.7	14.0	14.2	16.9	11.8	11.9	12.3	7.2	17.6	18.8	18.5	12.3	14.3
1931	15.3	15.7	13.1	14.6	16.3	12.3	12.9	13.7	10.8	8.4	17.7	19.3	18.9	8.5	13.4
1932	15.1	15.4	13.4	13.9	13.0	16.3	13.6	13.5	10.0	8.5	11.8	22.4	19.8	8.7	13.4
1933	15.3	15.5	14.1	11.8	11.1	10.4	11.6	16.2 ^d	10.7	7.8	18.7	23.8	22.5	12.4	14.5
Average															
1923-32 ...	15.1	15.5	12.6	14.4	14.3	17.3	12.0	12.8	10.8	8.2	15.6	19.9	18.8	10.8 ^e	14.0 ^e
1909-13 ...	15.3	15.9	11.0	14.2	14.2	19.8	11.9	9.9	12.0	8.9	16.8	19.1	18.5	10.2	13.9

* Data summarized from Tables II and III. Yield per acre averages for 1923-32 are simple averages of annual yields. Average yields for 1909-13 computed from average production and acreage data.

^a Excludes China and numerous small producing countries, of which Turkey is the largest.

^b Morocco, Algeria, Tunis.

^c Hungary, Yugoslavia, Rumania, Bulgaria.

^d Sown acreage minus average abandonment; yield per acre calculated on this basis.

^e 1925-32 average.

TABLE II.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING COUNTRIES, 1924-34*
(Million bushels)

Year	U.S. total	U.S. winter	U.S. spring	Canada	India	Australia	Argentina	Uruguay	Chile	Hungary	Yugoslavia	Rumania	Bulgaria	USSR
1924.....	840.1	571.6	268.5	262.1	360.6	164.6	191.1	9.9	24.5	51.6	57.8	70.4	24.7	....
1925.....	669.1	401.1	268.0	395.5	331.0	114.5	191.1	10.0	26.7	71.7	78.6	104.7	41.4	785.2
1926.....	833.5	631.9	201.6	407.1	324.7	160.8	230.1	10.2	23.3	74.9	71.4	110.9	36.5	913.8
1927.....	874.7	547.7	327.1	479.7	335.0	118.2	282.3	15.4	30.6	76.9	56.6	96.7	42.1	797.3
1928.....	913.0	577.4	335.5	566.7	290.9	159.7	349.1	12.3	29.7	99.2	103.3	115.5	49.2	807.3
1929.....	822.2	586.1	236.1	304.5	320.8	126.9	162.6	13.2	33.5	75.0	95.0	99.8	33.2	693.6
1930.....	889.7	631.2	258.5	420.7	390.8	213.6	232.3	7.4	21.2	84.3	80.3	130.8	57.3	989.2
1931.....	932.2	818.0	114.3	321.3	347.4	190.6	219.7	11.3	21.2	72.6	98.8	135.3	63.8	786.3
1932.....	744.1	475.7	268.4	443.1	336.9	213.9	240.9	5.4	26.1	64.5	53.4	55.5	48.1	744.0
1933.....	528.0	351.6	176.4	269.7	352.8	174.4	286.1	14.7	35.3	96.4	96.6	119.1	58.9	1,018.8
1934.....	497.0	400.5	96.5	275.3	349.4	137.0	....	....	....	61.5	68.3	73.5	41.6	....
Average 1928-32..	860.2	617.7	242.6	411.3	337.4	180.9	240.9	9.9	26.3	79.1	86.2	107.4	50.3	804.1
1909-13..	681.7	436.1	245.7	197.1	351.8	90.5	147.1	6.5 ^a	20.1	71.5	62.0	158.7 ^a	37.8	757.3

Year	Morocco	Algeria	Tunis	Egypt	British Isles	France	Germany	Italy	Belgium ^b	Netherlands	Denmark	Norway	Sweden	Switzerland
1924.....	28.8	17.3	5.1	34.2	53.9	281.2	89.2	170.1	13.3	4.6	5.9	.49	6.8	3.33
1925.....	23.9	32.7	11.8	36.2	53.7	330.3	118.2	240.8	15.0	5.6	9.7	.49	13.4	3.76
1926.....	20.6 ^c	23.6	13.0	37.2	52.2	231.8	95.4	220.6	13.4	5.5	8.8	.59	12.2	4.04
1927.....	23.5 ^c	28.3	8.1	44.3	57.2	276.1	120.5	195.8	17.0	6.2	9.4	.60	15.3	4.12
1928.....	24.7 ^c	30.3	13.7	37.3	50.9	281.3	141.6	228.6	17.9	7.3	12.2	.80	18.3	4.24
1929.....	31.8	33.3	12.3	45.2	50.9	337.3	123.1	260.1	13.5	5.5	11.8	.75	19.0	4.21
1930.....	21.3	32.4	10.4	39.8	43.4	228.1	139.2	210.1	13.7	6.1	10.2	.72	20.8	3.60
1931.....	29.8	25.6	14.0	46.1	38.6	264.1	155.5	244.4	14.2	6.8	10.1	.59	17.0	4.04
1932.....	28.0	29.2	17.5	52.6	44.4	333.5	183.8	276.9	16.1	12.8	11.0	.75	26.5	4.00
1933.....	28.9	32.0	9.2	40.0	64.4	362.3	205.9	298.0	16.1	15.3	11.5	.77	29.2	4.80
1934.....	31.2	39.7	15.8	37.3	69.7 ^a	307.2	160.8	232.7	15.0	17.2	10.7	1.17	29.6	5.07
Average 1928-32..	27.1	30.2	13.6	44.2	45.6	288.9	148.6	244.0	15.1	7.7	11.1	.72	20.3	4.02
1909-13..	17.0	35.2	6.2	33.7	59.6	325.6	131.3	184.4	15.8	5.0	6.3	.31	8.1	3.31

Year	Spain	Portugal	Austria	Czechoslovakia	Poland	Finland	Latvia	Estonia	Lithuania	Greece	Japan, Chosen	Mexico	South Africa	New Zealand
1924.....	121.8	10.6	8.5	32.2	37.5	.79	1.58	.54	3.3	7.7	35.7	10.4	7.1	5.45
1925.....	162.6	12.5	10.7	39.3	63.9	.93	2.16	.79	5.3	11.2	40.0	9.2	9.2	4.62
1926.....	146.6	8.6	9.4	39.9	52.5	.92	1.86	.88	4.2	12.4	38.7	10.3	8.0	7.95
1927.....	144.8	11.4	12.0	47.2	61.1	1.06	2.64	1.08	5.2	13.0	38.3	11.9	5.7	9.54
1928.....	122.6	7.5	12.9	52.9	59.2	1.00	2.50	1.04	6.3	13.1	39.4	11.0	7.2	8.83
1929.....	154.2	10.6	11.6	52.9	65.9	.76	2.34	1.26	9.3	11.4	38.8	11.3	10.6	7.24
1930.....	146.7	13.5	12.0	50.6	82.3	.87	4.06	1.64	9.0	9.7	38.5	11.4	9.3	7.58
1931.....	134.4	13.0	11.0	41.2	83.2	1.12	3.39	1.74	8.3	11.2	39.2	16.2	13.7	6.58
1932.....	184.2	23.4	12.2	53.7	49.5	1.48	5.29	2.08	9.4	17.1	39.9	9.7	10.6	11.06
1933.....	138.2	16.0	14.6	72.9	79.9	2.46	6.72	2.45	8.2	28.4	47.1	12.1	10.2	9.04
1934.....	173.7	20.5	13.2	50.0	63.5	2.82	7.92	3.20	9.9	31.3	54.9	10.1	13.6	....
Average 1928-32..	148.4	13.6	11.9	50.3	68.0	1.05	3.52	1.55	8.5	12.5	39.2	11.9	10.3	8.26
1909-13..	130.4	11.8 ^c	12.8	37.9	61.7	.14	1.48	.36	3.3	16.3 ^c	32.0	11.5 ^a	6.3	6.92

* Data of U.S. Department of Agriculture and International Institute of Agriculture. Figures for 1934 are preliminary; those in italics unofficial. Averages for 1909-13 are U.S. Department of Agriculture estimates of production within post-war boundaries. Dots (...) indicate that comparable data are not available.

^a Four-year average.

^b Including Luxemburg.

^c Mean of maximum and minimum production reported.

^a Partly estimated.

^c One year only.

TABLE III.—WHEAT ACREAGE IN PRINCIPAL PRODUCING COUNTRIES, 1924-34*

(Million acres)

Year	U.S. total	U.S. winter	U.S. spring	Canada	India	Aus- tralia	Argen- tina	Uruguay	Chile	Hun- gary	Yugo- slavia	Ru- mania	Bul- garia	USSR
1924.....	52.46	35.42	17.04	22.06	31.18	10.82	15.98	.85	1.43	3.50	4.24	7.84	2.49	.....
1925.....	52.44	31.96	20.48	20.79	31.78	10.20	17.62	.96	1.45	3.52	4.31	8.16	2.55	61.53
1926.....	56.82	37.60	19.22	22.90	30.47	11.69	18.95	.99	1.48	3.71	4.18	8.22	2.62	73.90
1927.....	59.63	38.20	21.43	22.46	31.30	12.28	20.20	1.15	1.84	4.02	4.52	7.66	2.67	77.39
1928.....	59.23	36.85	22.37	24.12	32.19	14.84	22.43	1.08	1.72	4.14	4.68	7.92	2.81	68.52
1929.....	63.32	41.19	22.13	25.26	31.97	14.98	15.90	1.10	1.72	3.71	5.21	6.76	2.66	73.46
1930.....	62.66	40.93	21.73	24.90	31.65	18.16	19.53	.96	1.61	4.19	5.25	7.55	3.01	80.49
1931.....	57.10	43.08	14.02	26.20	32.19	14.74	16.03	1.08	1.52	4.01	5.29	8.57	3.05	92.07
1932.....	57.20	35.28	21.93	27.18	33.80	15.77	17.79	.95	1.47	3.79	4.82	7.09	3.12	85.50
1933.....	47.52	28.45	19.07	25.99	32.97	14.97	.....^a	1.19	2.10	3.92	5.14	7.70	3.05	82.14
1934.....	44.00	32.48	11.51	23.98	36.06	12.96	.....^a	.97	....	3.92	5.21	7.57	3.03	.....
Average 1928-32..	59.90	39.47	20.44	25.53	32.36	15.70	18.34	1.03	1.61	3.97	5.05	7.58	2.93	80.01
1909-13..	48.08	29.06	19.01	9.94	29.22	7.60	14.88	.79 ^b	1.00	3.71	3.98	9.52 ^b	2.41	74.03

Year	Morocco	Algeria	Tunis	Egypt	British Isles	France	Ger- many	Italy	Bel- gium ^c	Nether- lands	Den- mark	Norway	Sweden	Switzer- land
1924.....	2.46	3.53	1.20	1.42	1.63	13.62	3.62	11.28	.362	.118	.149	.021	.322	.111
1925.....	2.62	3.61	1.62	1.38	1.58	13.87	3.84	11.67	.392	.132	.199	.022	.363	.112
1926.....	2.56	3.74	1.84	1.53	1.68	12.97	3.96	12.14	.386	.132	.252	.022	.381	.127
1927.....	2.30	3.47	1.38	1.66	1.74	13.06	4.32	12.30	.427	.153	.274	.025	.561	.127
1928.....	2.66	3.66	2.02	1.59	1.49	12.96	4.27	12.26	.445	.148	.252	.028	.561	.127
1929.....	3.01	3.80	1.73	1.61	1.41	13.34	3.96	11.79	.377	.112	.260	.030	.574	.129
1930.....	2.96	4.03	1.90	1.52	1.43	13.28	4.40	11.92	.436	.142	.249	.030	.647	.134
1931.....	2.54	3.64	1.98	1.65	1.27	12.84	5.36	11.88	.404	.192	.259	.029	.683	.135
1932.....	2.71	3.74	2.39	1.76	1.36	13.43	5.64	12.18	.417	.297	.245	.028	.746	.137
1933.....	3.21	3.99	1.75	1.43	1.79	13.50	5.73	12.57	.406	.338	.261	.028	.799	.140
1934.....	2.84	4.01	1.90	1.44	1.95	13.11	5.43	12.15	.412	.359	....	.046	.603 ^d	....
Average 1928-32..	2.78	3.77	2.00	1.63	1.39	13.17	4.73	12.01	.416	.178	.253	.029	.642	.132
1909-13..	1.70	3.52	1.31	1.31	1.89	16.50	4.03	11.79	.431	.138	.154	.012	.255	.105

Year	Spain	Portu- gal	Aus- tria	Czecho- slovakia	Poland	Finland	Latvia	Estonia	Lithu- ania	Greece	Japan, Chosen	Mexico	South Africa	New Zealand
1924.....	10.38	1.04	.482	1.50	3.16	.037	.106	.044	.210	1.15	2.03	1.40	.76	.167
1925.....	10.72	1.05	.484	1.53	3.20	.038	.119	.051	.277	1.15	2.04	1.13	.97	.152
1926.....	10.78	1.06	.500	1.80	3.25	.039	.122	.059	.303	1.30	2.04	1.29	.88	.220
1927.....	10.83	1.06	.505	1.85	3.36	.044	.145	.067	.297	1.23	2.06	1.31	.77	.261
1928.....	10.57	1.10	.514	1.92	3.19	.046	.164	.070	.393	1.33	2.10	1.28	.82	.255
1929.....	10.62	1.08	.515	2.02	3.53	.034	.145	.082	.488	1.24	2.09	1.29	1.08	.236
1930.....	11.13	1.10	.508	1.96	4.07	.035	.179	.090	.415	1.43	2.05	1.22	1.27	.249
1931.....	11.24	1.27	.517	2.05	4.50	.045	.215	.099	.478	1.50	2.04	1.50	1.74	.269
1932.....	11.25	1.46	.534	2.06	4.26	.059	.255	.128	.509	1.50	2.04	1.10	1.56	.303
1933.....	11.17	1.42	.543	2.27	4.19	.091	.309	.155	.499	1.78	2.30	1.17	1.40	.286
1934.....	11.10	1.46	.548	2.33	4.38	.104	.190 ^d	.163	.514	1.87	2.38	1.18	....	....
Average 1928-32..	10.96	1.20	.518	2.00	3.91	.044	.192	.094	.457	1.40	2.06	1.28	1.29	.262
1909-13..	9.55	1.21 ^e	.635	1.72	3.34	.008	.085	.023	.211	1.13 ^f	1.75	2.17 ^g	.74	.241

* Data of U.S. Department of Agriculture and International Institute of Agriculture. Figures for 1934 are preliminary. Averages for 1909-13 are U.S. Department of Agriculture estimates of area within post-war boundaries. Dots (...) indicate that comparable data are not available.

^a See Table VII for area sown.

^b Four-year average.

^c Including Luxemburg.

^d Winter wheat only.

^e Three-year average.

^f One year only.

^g Two-year average.

TABLE IV.—WHEAT YIELD PER ACRE IN PRINCIPAL PRODUCING COUNTRIES, 1924-34*

(Bushels per acre)

Year	U.S. total	U.S. winter	U.S. spring	Canada	India	Aus- tralia	Argen- tina	Uruguay	Chile	Hun- gary	Yugo- slavia	Ru- mania	Bul- garia	USSR
1924.....	16.0	16.1	15.8	11.8	11.6	15.2	12.0	11.7	17.1	14.7	13.6	9.0	9.9	....
1925.....	12.8	12.6	13.1	19.0	10.4	11.2	10.8	10.5	18.4	20.3	18.3	12.8	16.2	12.8
1926.....	14.7	16.8	10.5	17.8	10.7	13.8	12.1	10.4	15.7	20.2	17.1	13.5	14.0	12.4
1927.....	14.7	14.3	15.3	21.4	10.7	9.6	14.0	13.4	16.6	19.1	12.5	12.6	15.8	10.3
1928.....	15.4	15.7	15.0	23.5	9.0	10.8	15.6	11.3	17.3	23.9	22.1	14.6	17.5	11.8
1929.....	13.0	14.2	10.7	12.1	10.0	8.5	10.2	12.0	19.4	20.2	18.2	14.7	12.5	9.4
1930.....	14.2	15.4	11.9	16.9	12.3	11.8	11.9	7.7	13.2	20.1	15.3	17.3	19.1	12.3
1931.....	16.3	19.0	8.2	12.3	10.8	12.9	13.7	10.4	14.0	18.1	18.7	15.8	20.9	8.5
1932.....	13.0	13.5	12.2	16.3	10.0	13.6	13.5	5.7	17.8	17.0	11.1	7.8	15.4	8.7
1933.....	11.1	12.4	9.3	10.4	10.7	11.6	....	12.4	16.8	24.6	18.8	15.5	19.3	12.4
1934.....	11.3	12.3	8.4	11.5	9.7	10.6	....	....	....	15.7	13.1	9.7	13.7	....
Average 1923-32..	14.3	15.2	12.4	17.3	10.8	12.0	12.8	10.6	16.8	19.4	16.3	13.4	15.4	10.8 ^a
1909-13..	14.2	15.0	12.9	19.8	12.0	11.9	9.9	8.2 ^b	20.0	19.3	15.6	16.7 ^b	15.7	10.2

Year	Morocco	Algeria	Tunis	Egypt	British Isles	France	Ger- many	Italy	Bel- gium ^c	Nether- lands	Den- mark	Norway	Sweden	Switzer- land
1924.....	11.7	4.9	4.3	24.1	33.0	20.6	24.6	15.1	36.8	39.2	39.4	23.5	21.1	30.0
1925.....	9.1	9.1	7.2	26.2	34.1	23.8	30.8	20.6	38.3	42.4	49.0	22.3	36.8	33.6
1926.....	8.0	6.3	7.1	24.3	31.0	17.9	24.1	18.2	34.8	41.6	34.8	26.6	31.9	31.9
1927.....	10.2	8.2	5.8	26.8	32.8	21.1	27.9	15.9	39.8	40.2	34.3	24.2	27.3	32.5
1928.....	9.3	8.3	6.8	23.5	34.2	21.7	33.2	18.6	40.3	49.6	48.5	28.5	32.7	33.4
1929.....	10.6	8.8	7.1	28.0	36.0	25.3	31.1	22.1	35.8	48.8	45.3	25.0	33.1	32.6
1930.....	7.2	8.1	5.5	26.1	30.3	17.2	31.6	17.6	31.4	42.6	41.0	24.0	32.2	26.9
1931.....	11.7	7.0	7.1	27.9	30.4	20.6	29.0	20.6	35.2	35.2	38.8	20.4	24.9	30.0
1932.....	10.3	7.8	7.3	29.9	32.6	24.8	32.6	22.7	38.6	43.1	44.9	26.8	35.5	29.2
1933.....	9.0	8.0	5.3	28.0	36.0	26.8	35.9	23.7	39.7	45.3	44.1	27.5	36.5	34.3
1934.....	11.0	9.9	8.3	25.9	35.7	23.4	29.6	19.2	36.4	47.9	....	25.4	....	....
Average 1923-32..	9.7	8.0	6.4	26.3	32.7	21.3	29.4	19.2	36.9	42.3	41.9	24.5	30.6	31.4
1909-13..	10.0	10.0	4.8	25.6	31.6	19.7	32.6	15.6	36.7	36.1	41.1	25.5	31.8	31.6

Year	Spain	Portu- gal	Aus- tria	Czecho- slovakia	Poland	Finland	Latvia	Estonia	Lithu- ania	Greece	Japan, Chosen	Mexico	South Africa	New Zealand
1924.....	11.7	10.2	17.6	21.5	11.9	21.4	14.9	12.3	15.8	6.7	17.6	7.4	9.4	32.6
1925.....	15.2	11.9	22.0	25.7	19.9	24.4	18.2	15.5	19.1	9.8	19.7	8.2	9.5	30.4
1926.....	13.6	8.1	18.9	22.2	16.2	23.7	15.2	14.9	13.8	9.5	19.0	8.0	9.1	36.1
1927.....	13.4	10.8	23.7	25.5	18.2	24.2	18.2	16.1	17.7	10.5	18.6	9.1	7.3	36.6
1928.....	11.6	6.8	25.1	27.6	18.6	21.7	15.2	14.8	16.1	9.8	18.8	8.6	8.8	34.6
1929.....	14.5	9.9	22.4	26.2	18.7	22.5	16.1	15.4	19.1	9.2	18.6	8.8	9.8	30.7
1930.....	13.2	12.3	23.6	25.8	20.2	24.7	22.7	18.2	21.7	6.8	18.8	9.4	7.3	30.4
1931.....	12.0	10.2	21.3	20.1	18.5	24.9	15.8	17.6	17.4	7.5	19.2	10.8	7.9	24.5
1932.....	16.4	16.0	22.8	26.1	11.6	25.1	20.7	16.2	18.5	11.4	19.6	8.8	6.8	36.5
1933.....	12.4	11.3	26.9	32.1	19.1	27.0	21.7	15.8	16.4	16.0	20.5	10.3	7.3	31.6
1934.....	15.6	14.0	....	21.5	14.5	27.1	....	19.6	19.3	16.7	23.1	8.6	...	....
Average 1923-32..	13.7	10.9	21.6	24.5	17.2	23.1	17.2	15.4	17.4	9.0	18.6	8.8 ^d	8.4	31.6
1909-13..	13.7	....	20.2	22.0	18.4	17.1	17.4	15.8	15.5	14.4 ^e	18.2	...	8.4	28.7

* Computed from data in Tables II and III. Figures for 1934 are preliminary. Dots (...) indicate that comparable data are not available. Averages for 1923-32 are simple averages of annual yields; 1909-13 averages are computed from average production and acreage data.

^a Average for 1925-32. ^b Four-year average.

^c Including Luxemburg.

^d Average for 1924-32.

^e One year only.

TABLE V.—RYE, FEED GRAIN, AND POTATO PRODUCTION IN PRINCIPAL PRODUCING COUNTRIES AND AREAS, 1928-33*

(Million bushels)

Year	Rye												
	Europe ex-Russia	Ger- many	Poland	Czecho- slovakia	Austria	France	Spain	Danube basin ^a	Baltic coun- tries ^b	Scandl- navia ^c	Nether- lands, Belgium ^d	USSR	United States
1928....	904	335.5	240.5	72.3	19.9	34.1	16.4	59.7	43.7	27.1	40.8	760	38.6
1929....	939	321.0	276.0	72.2	20.1	36.5	22.9	60.3	47.7	27.2	40.9	801	35.5
1930....	923	302.3	273.9	70.4	20.6	28.4	21.5	67.1	62.8	27.8	34.0	929	46.3
1931....	775	263.0	224.5	54.6	18.9	29.5	21.1	53.9	40.1	19.9	35.0	854	32.3
1932....	931	329.3	240.6	85.7	24.2	33.9	25.9	58.2	54.4	26.4	38.0	867	40.6
1933....	1,003	343.6	278.5	82.1	27.0	35.3	20.7	75.7	59.1	28.5	38.5	952	21.2
Average 1928-32....	894	310.2	251.1	71.0	20.7	32.5	21.6	59.8	49.7	25.7	37.7	842	38.7
1909-13....	982	368.3	224.8	63.5	23.8	52.5	27.6	69.4	56.0	44.2	40.7	744 ^e	36.1

Year	Corn								Barley				
	Europe ex-Russia	Rumania	Yugoslavia	Hungary	Italy	USSR	United States	Argentina	Europe ex-Russia	Germany	Danube basin ^a	USSR	United States
1928....	384	109	72	50	65	130	2,715	252	743	154	134	260	330
1929....	705	251	163	71	100	119	2,536	281	827	146	186	331	280
1930....	611	178	136	55	118	105	2,065	420	758	131	175	311	304
1931....	629	239	126	60	77	181	2,589	299	689	139	121	225	199
1932....	762	236	189	96	119	135	2,907	268	778	148	132	231	302
1933....	617	179	142	71	102	189	2,344	232	776	159	163	360	157
Average 1928-32....	618	203	137	66	96	134	2,562	304	759	144	150	272	283
1909-13....	581	193	112	61	103	52 ^e	2,712	192	701	134	125	418 ^e	185

Year	Oats						Potatoes						
	Europe ex-Russia	Germany	France	Poland	Scandinavia ^c	USSR	United States	Europe ex-Russia	Germany	Poland	Czechoslovakia	France	British Isles
1928....	1,879	482	340	172	166	1,135	1,319	4,562	1,516	1,016	326	414	297
1929....	2,060	509	373	203	169	1,084	1,118	5,186	1,473	1,167	393	594	331
1930....	1,713	390	286	162	160	1,145	1,277	5,051	1,731	1,135	329	512	254
1931....	1,695	427	316	159	142	772	1,127	5,029	1,612	1,139	357	599	216
1932....	1,851	458	332	165	168	774	1,247	5,351	1,728	1,101	341	606	321
1933....	1,939	479	391	185	154	1,062	732	4,986	1,619	1,041	301	545	299
Average 1928-32....	1,840	453	329	172	161	982	1,218	5,036	1,612	1,112	349	545	284
1909-13....	1,929	527	368	194	157	925 ^e	1,143	4,183	1,374	911	245	527	254

* Data of U.S. Department of Agriculture and International Institute of Agriculture. Averages for 1909-13 are U.S. Department of Agriculture estimates of production within post-war boundaries.

^a Hungary, Yugoslavia, Rumania, Bulgaria.

^d Including Luxemburg.

^b Finland, Estonia, Latvia, Lithuania.

^c Many Russian statisticians regard pre-war averages as too low for proper comparison with post-war figures.

^e Denmark, Norway, Sweden.

TABLE VI.—UNITED STATES WHEAT PRODUCTION BY CLASSES, 1928-34*

(Million bushels)

Crop of	Hard red winter	Soft red winter	White	Hard red spring	Durum	Total
1928.....	392	128	93	202	98	913
1929.....	370	166	84	145	56	822
1930.....	403	179	88	161	59	890
1931.....	516	254	70	70	21	932
1932.....	277	149	84	191	42	744
1933.....	170	147	89	104	17	528
1934.....	201	163	67	59	7	497
Average 1928-32.....	392	175	84	154	55	860

* Latest estimates of the U.S. Department of Agriculture from *Agriculture Yearbook, 1934*, and *Crops and Markets*, October 1934, p. 380.

TABLE VII.—WHEAT ACREAGE IN THE UNITED STATES AND ARGENTINA, 1928-34*

(Million acres)

Year	United States					Argentina	
	Winter sown	Winter harvested	Spring sown	Spring harvested	Total harvested	Sown	Harvested
1928....	48.43	36.85	22.71	22.37	59.23	22.78	22.43
1929....	43.92	41.19	22.87	22.13	63.32	20.47	15.90
1930....	44.97	40.93	22.26	21.73	62.66	21.28	19.53
1931....	45.24	43.08	20.38	14.02	57.10	17.30	16.03
1932....	42.35	35.28	22.67	21.93	57.20	19.79	17.79
1933....	42.69	28.45	23.82	19.07	47.52	19.66	.....
1934....	41.00	32.49	17.69	11.51	44.00	18.48	.....

* Data as reported by the U.S. Department of Agriculture in *Agriculture Yearbooks*, *Crop Reports*, and *Foreign Crops and Markets*.

TABLE VIII.—WHEAT PRODUCTION IN OTHER COUNTRIES, 1925-34*
(Million bushels)

Year	Turkey	Syria, Lebanon, Alouite	Palestine	Cyprus	Manchuria	Brazil	Peru
1925...	39.5	10.7	3.71	2.08	35.3	5.67	3.18
1926...	90.7	13.9	3.64	1.62	35.6	4.96	2.67
1927...	49.0	14.8	3.65	1.87	53.1	4.64	3.15
1928...	59.2	6.7	2.40	1.56	54.0	4.63	3.08
1929...	99.9	16.8	3.23	2.20	47.8	6.27	4.47
1930...	93.9	19.4	3.21	1.87	49.8	4.98	4.52
1931...	104.9	14.2	2.93	1.62	58.1	....	3.48
1932...	71.1	9.8	1.88	1.14	41.6	....	3.12
1933...	80.8	12.0	1.63	....	31.7	....	....
1934...	88.6	....	3.27	....	23.9	....	....

* Available data for countries not included in Table II and producing over 1 million bushels a year, from U.S. Department of Agriculture. Persia, 1931, 18.8 million bushels, as reported by the International Institute of Agriculture.

TABLE IX.—CANADIAN SPRING WHEAT GRADINGS, AND AVERAGE PROTEIN CONTENT, 1925-34*
(Percentage of inspections; percentage of total weight)

Sept.-Aug.	Gradings						Protein content ^c
	No. 1 ^a	No. 2	No. 3	Nos. 1-3	Nos. 4-6, feed	No. grade ^b	
1925-26...	22.4	27.0	13.9	63.3	4.3	28.6	....
1926-27...	9.2	17.5	7.8	34.5	5.9	51.2	....
1927-28...	.9	7.7	22.3	30.9	21.4	43.1	....
1928-29...	1.5	12.3	19.7	33.5	58.0	1.4	....
1929-30...	40.0	35.9	11.8	87.7	2.9	1.4	13.3
1930-31...	39.6	20.8	5.1	65.5	2.2	25.3	13.1
1931-32...	36.2	33.8	9.9	79.9	4.6	10.8	13.7
1932-33...	54.8	29.7	3.5	88.0	2.9	3.8	14.0
1933-34...	45.4	29.3	4.6	79.3	4.9	10.6	13.9

* From data in *Canadian Grain Statistics*, and Dominion Grain Research Laboratory, *Seventh Annual Report*, 1933, p. 8.

^a Includes No. 1 Hard and No. 1 Northern.

^b Wheat of straight grades, but with higher moisture content. Designation changed to "tough and damp" beginning with 1930-31.

^c Average percentage protein content of samples of Nos. 1 Hard to 3 Northern, 13.5 per cent moisture basis.

TABLE X.—WHEAT MARKETINGS IN NORTH AMERICA, MONTHLY, 1924-34*
(Million bushels)

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total ^a
UNITED STATES (RECEIPTS AT 14 PRIMARY MARKETS) ^b															
1924-25	35.1	93.0	82.1	88.0	60.5	36.3	24.7	19.9	17.3	10.4	17.7	21.9	41.8	43.3	506.9
1925-26	41.8	43.3	57.9	36.0	34.1	34.9	21.6	16.2	15.1	14.0	15.7	21.1	77.0	71.6	351.7
1926-27	77.0	71.6	48.7	37.1	29.8	22.4	24.6	21.0	16.6	14.4	19.3	20.7	58.8	81.6	403.2
1927-28	58.8	81.6	79.7	73.2	44.8	26.5	23.5	22.5	26.3	17.9	25.9	15.5	72.6	84.2	496.2
1928-29	72.6	84.2	73.3	84.4	43.5	33.0	22.5	28.7	27.2	17.5	18.6	25.7	94.2	101.7	531.2
1929-30	94.2	101.7	47.0	36.3	20.6	22.9	17.5	19.9	16.7	13.4	16.5	18.7	99.0	85.5	425.4
1930-31	99.0	85.5	62.6	28.9	24.6	21.5	29.5	30.7	30.8	21.2	30.9	29.7	104.0	61.5	494.9
1931-32	104.0	61.5	38.9	32.7	26.4	13.8	17.1	25.0	13.4	13.2	15.3	13.5	41.0	40.7	374.8
1932-33	41.0	40.7	38.4	27.2	17.6	13.9	12.8	9.9	12.7	15.8	23.3	28.6	37.2	26.7	281.9
1933-34	37.2	26.7	22.6	17.6	11.6	11.2	8.7	10.0	9.1	8.4	12.5	23.4	49.7	23.0	199.0
CANADA (RECEIPTS AT COUNTRY ELEVATORS AND PLATFORM LOADINGS) ^c															
1924-25	4.4	4.0	21.3	73.2	47.2	23.4	15.1	11.6	7.6	3.0	4.4	5.6	3.5	2.3	218.2
1925-26	3.5	2.3	77.3	70.7	81.8	55.2	26.4	14.6	11.0	5.4	3.1	6.4	4.5	4.1	360.5
1926-27	4.5	4.1	60.7	90.0	75.9	39.0	22.2	14.9	14.2	3.0	2.4	8.7	5.6	1.7	338.3
1927-28	5.6	1.7	38.0	90.4	100.0	58.5	36.8	27.6	16.4	10.1	11.9	12.0	6.0	3.4	411.1
1928-29	6.0	3.4	134.1	105.6	107.0	43.9	17.5	16.5	21.0	9.0	5.5	8.2	4.1	14.2	486.6
1929-30	4.1	14.2	109.6	52.9	19.5	10.9	5.8	4.9	5.5	2.7	4.0	4.4	3.0	21.2	244.4
1930-31	3.0	21.2	105.1	53.8	52.4	17.3	9.3	9.8	9.6	8.4	6.4	8.2	5.4	11.9	297.6
1931-32	5.4	11.9	47.4	74.1	43.1	19.7	10.9	12.2	12.9	6.0	8.2	15.0	3.8	17.6	270.9
1932-33	3.8	17.6	120.5	82.7	36.5	18.5	11.3	11.5	20.8	10.3	10.8	19.5	10.5	25.6	378.5
1933-34	10.5	25.6	55.6	46.4	23.0	10.3	10.4	8.3	9.1	7.3	8.3	12.3	10.9	30.8	232.7

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

^a For United States, July-June; for Canada, September-August.

^b Includes Chicago, Detroit, Duluth, Indianapolis, Kansas City, Milwaukee, Minneapolis, Omaha, Peoria, Sioux City, St. Joseph, St. Louis, Toledo, and Wichita.

^c Prairie Provinces only. These figures better represent the movement of wheat from farms, and are more significant in explaining the course of Canadian visible supplies, than statistics of receipts at terminal markets.

TABLE XI.—WORLD WHEAT VISIBLE SUPPLIES, AUGUST 1, 1924-34, AND MONTHLY 1933-34*
(Million bushels)

Date	Total	U.S. grain		Canadian grain		Total North America	Afloat to Europe	U.K. ports	Total U.K. and afloat	Australia	Argentina
		United States	Canada	Canada	United States						
August 1											
1924.....	167.5	46.2 ^a	.9	28.9	3.0	79.0	41.7	10.0	51.7	30.0	6.8
1925.....	116.6	34.0 ^a	2.4	18.5	3.0	57.9	33.4	9.2	42.6	8.4	7.7
1926.....	119.2	34.6 ^a	.3	27.1	3.7	65.7	38.6	4.3	42.9	6.2	4.4
1927.....	150.9	33.7	1.3	37.8	4.8	77.6	46.1	8.2	54.3	12.8	6.2
1928.....	200.2	63.1	2.3	52.4	13.6	131.4	43.6	9.8	53.4	9.5	5.9
1929.....	325.4	136.4	2.3	83.8	22.9	245.4	37.6	6.2	43.8	20.0	16.2
1930.....	358.0	161.9	4.0	89.5	16.1	271.5	39.2	6.8	46.0	33.5	7.0
1931.....	447.8	233.6	22.9	105.8	5.5	367.8	37.9	10.6	48.5	24.5	7.0
1932.....	385.5	175.9	15.4	116.8	4.7	312.8	31.4	9.1	40.5	26.0	6.2
1933.....	423.2	135.0	3.7	190.4	6.7	335.8	31.6	11.4	43.0	31.5	12.9
1934.....	423.2	115.9	...	177.6	9.8	303.3	34.8	13.6	48.4	52.0	19.5
1933-34											
Sept. 1.....	430.1	151.7	3.7	194.1	4.8	354.3	34.7	10.2	44.9	19.5	11.4
Oct. 1.....	456.9	156.6	3.1	220.5	5.8	386.0	34.5	13.2	47.7	12.5	10.7
Nov. 1.....	465.8	151.3	2.7	241.2	9.7	404.9	28.7	16.8	45.5	6.2	9.2
Dec. 1.....	443.1	142.2	2.2	228.6	14.5	387.5	27.3	17.2	44.5	3.0	8.1
Jan. 1.....	475.9	132.5	2.3	227.6	14.0	376.4	20.7	17.5	38.2	50.0	10.3
Feb. 1.....	521.0	116.5	2.2	224.0	9.8	352.5	37.8	12.8	50.6	105.0	12.9
Mar. 1.....	507.4	107.2	2.2	221.1	8.8	339.3	40.0	13.3	53.3	97.5	17.3
Apr. 1.....	483.1	97.1	2.2	218.3	5.7	323.3	36.6	14.8	51.4	90.0	18.4
May 1.....	455.1	88.8	2.2	207.4	1.5	299.9	30.5	15.4	45.9	88.0	21.3
June 1.....	419.6	79.0	...	195.2	5.3	279.5	30.6	14.5	45.1	74.8	20.2
July 1.....	406.8	80.6	...	181.6	10.1	272.3	33.2	14.0	47.2	66.7	20.6
Aug. 1.....	423.2	115.9	...	177.6	9.8	303.3	34.8	13.6	48.4	52.0	19.5

* Data from *Commercial Stocks of Grain in Store in Principal U.S. Markets*; *Canadian Grain Statistics*; and *Corn Trade News*, except as noted.

^a Bradstreet's visible supplies from Bradstreet's.

TABLE XII.—WORLD WHEAT STOCKS EX-RUSSIA (APPROXIMATE), ABOUT AUGUST 1, 1922-34*
(Million bushels)

Year	Total	Four chief ex- porters	Total North America	United States grain	Canadian grain	Australia	Argentina	Lower Danube	India	North- ern Africa*	Import- ing Europe	Afloat to Europe	Afloat to ex-Europe	Japan
1922.....	617	244	159	118	41	24	61	26	29	15	240	49	5	9
1923.....	560	277	180	147	33	33	64	36	36	9	150	39	8	5
1924.....	685	291	191	143	48	34	66	45	56	18	214	42	8	11
1925.....	528	233	147	117	30	28	58	20	51	15	165	33	6	5
1926.....	611	237	146	106	40	24	67	40	49	24	206	39	7	9
1927.....	647	276	172	119	53	35	69	46	36	26	202	46	9	6
1928.....	704	346	215	123	92	36	95	25	35	22	213	44	13	6
1929.....	971	543	372	245	127	41	130	75	29	21	241	38	16	8
1930.....	922	550	436	309	127	49	65	44	29	30	217	39	7	6
1931.....	1,007	620	480	340	140	60	80	57	71	17	184	38	14	6
1932.....	998	653	538	401	137	50	65	49	51	11	184	31	10	9
1933.....	1,097	743	613	395	218	55	75	27	29	16	234	32	11	5
1934.....	1,141	696	493	290	203	85	118	54	29	10	301	35	11	5

* Based so far as possible upon stocks reported either officially (e.g., North America) or unofficially (e.g., afloat to Europe); see Tables XI, XIII, XXIX, and WHEAT STUDIES, February 1933, IX, No. 5. United States stocks as of July 1; others as of August 1 or nearest date possible.

* Algeria, Morocco, Tunis, Egypt.

TABLE XIII.—WHEAT CARRYOVERS IN THE UNITED STATES AND CANADA, 1922-34*

(Million bushels)

Year	United States (July 1)						Canada (August 31, 1922-23; July 31, 1924-34)						
	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	Total in five positions	Canadian grain in U.S. ^c
1922.....	32.5	28.8	20.3 ^d	35.0 ^e	116.6	0.5	2.4	4.6	6.4	4.6	2.6	20.6	1.6
1923.....	35.2	37.1	29.4 ^d	44.0 ^e	145.7	1.2	1.4	2.4	2.7	2.8	2.4	11.7	0.5
1924.....	29.3	36.6	38.6 ^d	38.0 ^e	142.5	0.3	7.4 ^f	4.7	22.7	5.9	4.5	45.2 ^f	3.0
1925.....	28.6	25.3	29.3 ^d	30.6	113.8	2.7	2.7	2.7	15.2	3.9	2.0	26.5	3.0
1926.....	27.1	29.5	16.5 ^f	31.9	105.0	1.0	3.9	1.3	24.1	3.2	3.9	36.4	3.7
1927.....	26.7	21.8	21.1	48.3	117.9	1.4	4.2	1.5	35.6	2.3	4.2	47.8	4.8
1928.....	19.6	19.3	38.6	42.8	120.3	2.5	4.2	4.7	48.9	13.7	6.1	77.6	13.6
1929.....	45.0	41.5	90.4	64.5	241.4	3.3	5.6	6.3	76.3	8.7	7.5	104.4	22.9
1930.....	60.1	60.2	109.3	73.9 ^g	303.5	4.7	5.3	16.8	69.3	12.8	6.9	111.1	16.1
1931.....	38.0	30.3	204.0	52.4 ^g	324.7	15.3	19.5	34.1 ^h	71.1	7.3	2.1 ⁱ	134.1	5.5
1932.....	92.8	41.6	168.4	81.8 ^g	384.6	15.9	7.5	33.5 ^h	78.6	9.3	2.9 ⁱ	131.8	4.7
1933.....	82.2	64.3	123.6	121.2 ^g	391.3	4.1	12.3	77.9 ^h	109.3	9.0	3.2 ⁱ	211.7	6.2
1934.....	61.0	51.1	80.5	97.2 ^g	289.8	...	8.7	70.4 ^h	104.7	7.7	1.8 ⁱ	193.3	10.0

* Official data of U.S. Department of Agriculture and Dominion Bureau of Statistics, chiefly from *Agriculture Yearbooks*, *Canada Yearbooks*, *Canadian Grain Statistics*, and press releases.

^a Wheat stocks in, and in transit to, city mills reported to the Census Bureau (see Table XIV), here raised to 100 per cent to account for stocks in non-reporting mills.

^b Strictly "in country, private, and mill elevators in the Western Division," but see note *h*.

^c In bond for export as wheat, excludes some bonded wheat in transit by rail.

^d Bradstreet's visible.

^e Rough approximations published and designated as

"unofficial" by the U.S. Department of Agriculture in *Wheat Facts*, Part I, July 1930, p. 18.

^f Farm stocks as of August 31, 1924.

^g Includes wheat "stored for others" in this position, as follows, in million bushels: 1930, 12.5; 1931, 18.4; 1932, 7.2; 1933, 10.0; and 1934, 7.5.

^h Including stocks in flour mills, Western Division.

ⁱ In the Eastern Division only.

TABLE XIV.—CITY MILL STOCKS IN THE UNITED STATES, JUNE 30, 1925-34*

(Million bushels)

Year	Percentage of census flour output represented ^a	Wheat in						Flour as wheat ^d	Grand total	Wheat in and in transit to mills ^e
		Country elevators	Public terminals	Private terminals ^b	Transit to mills	Mills ^c	Total			
1925.....	87.4	2.16	3.44	....^f	....^f	26.72 ^f	32.32	15.73	48.05	....^f
1926.....	87.4	2.52	3.00	1.14	6.73	22.44	35.83	14.67	50.50	29.17
1927.....	90.1	2.56	3.88	1.61	10.39	34.15	52.59	16.76	69.35	44.54
1928.....	90.4	1.91	3.68	.55	10.16	29.78	46.08	17.08	63.16	39.94
1929.....	93.6	3.52	8.32	2.16	15.44	45.91	75.35	17.98	93.33	61.35
1930.....	91.8	3.50	3.80	1.79	13.79	43.78	66.66	16.61	83.27	57.57
1931.....	96.3	2.70	1.48	1.85	11.74	21.00	38.77	13.30	52.07	32.74
1932.....	93.5	2.55	2.33	3.30	9.43	60.33	77.94	15.00	92.94	69.76
1933.....	95.5	6.91	8.12	10.61	15.08	91.13	131.85	14.07	145.92	106.21
1934.....	92.6	4.97	5.22	9.70	13.02	70.06	102.97	18.40	121.37	83.08

* As reported to Bureau of the Census, here compiled from press releases of the U.S. Department of Commerce. These data have been published quarterly from June 30, 1926, and also for December 31, 1925. See *WHEAT STUDIES*, December 1931, VIII, 193.

^a Derived from biennial census data as follows:

Census of	Total output (bbls.)
1923	114,438,544
1925	114,689,930
1927	118,132,027
1929 (preliminary)	117,369,505
1929 (final)	120,039,673
1931 (final)	115,364,274

Period applied

6-30-25 to 12-31-26
3-31-27 to 9-30-28
12-31-28 to 12-31-30
3-31-31 to 6-30-31
9-30-31 to 12-31-32
3-31-33 to

^b In private terminal elevators not attached to mills.

^c In mills and elevators attached to mills. In addition to wheat owned, there was reported stored for others as follows, in million bushels: 1931, 17.73; 1932, 6.73; 1933, 9.50; and 1934, 6.91.

^d In wheat equivalent (4.7 bu. = 1 bbl.).

^e Summation of columns 5 and 6.

^f In 1925 a single figure was reported for wheat in mills, in private terminal elevators not attached to mills, and in transit to mills.

TABLE XV.—WHEAT CARRYOVERS IN THE UNITED STATES BY CLASSES, 1929-34*

(Million bushels)

July 1	Hard red winter	Soft red winter	White	Hard red spring	Durum	Total
1929.....	90	22	18	90	27	247
1930.....	118	33	24	100	28	303
1931.....	150	26	25	96	28	325
1932.....	230	67	18	58	12	385
1933.....	193	33	38	114	13	391
1934.....	133	37	33	78	9	290
Average 1929-33.....	156	36	25	92	22	330

* Data from *World Wheat Prospects*, June and August 1934.

TABLE XVI.—UNITED STATES WHEAT GRAIN EXPORTS BY CLASSES, FROM 1924-25*

(Million bushels)

July-June	Hard red winter	Soft red winter	White	Hard red spring	Durum	Total
1924-25.....	121	8	11	21	34	195
1925-26.....	10	2	19	5	27	63
1926-27.....	73	31	28	2	22	156
1927-28.....	60	13	30	6	37	146
1928-29.....	35	3	15	2	48	103
1929-30.....	54	3	18	2	15	92
1930-31.....	47	3	14	1	12	76
1931-32.....	76	2	14	0	5	97
1932-33.....	17	0	2	0	2	21
1933-34 ^a	1	0	18	0	0	19

* Estimates of the U.S. Department of Agriculture.

^a Preliminary.

TABLE XVII.—UNITED STATES TRADE IN WHEAT AND FLOUR WITH FOREIGN COUNTRIES AND ALASKA, HAWAII, AND PUERTO RICO, FROM 1924-25*

(Thousand bushels)

July-June	Wheat				Flour as wheat		Wheat and flour as wheat				
	Exports	Imports	Re-exports	Net exports	Exports	Net exports	Exports	Imports less re-exports	Net exports	Shipments to possessions	Net exports plus shipments
1924-25.....	195,490	6,169	70	189,391	65,313	65,304	260,803	6,108	254,695	2,871	257,566
1925-26.....	63,189	15,583	261	47,867	44,846	44,816	108,035	15,352	92,683	2,741	95,424
1926-27.....	156,250	13,235	81	143,096	62,910	62,899	219,160	13,165	205,995	3,082	209,077
1927-28.....	145,999	15,707	39	130,331	60,260	60,247	206,259	15,681	190,578	2,692	193,270
1928-29.....	103,114	21,430	43	81,727	60,574	60,575	163,688	21,386	142,302	3,172	145,474
1929-30.....	92,175	12,948	60	79,287	61,070	61,075	153,245	12,883	140,362	2,983	143,345
1930-31.....	76,365	19,054	15	57,326	55,110	55,108	131,475	19,041	112,434	2,850	115,284
1931-32.....	96,519 ^a	12,885	863	84,497 ^a	39,276	39,275	135,795 ^a	12,022	123,772 ^a	2,797	126,569 ^a
1932-33.....	20,889	9,379	1,606	13,116	20,337	20,337	41,226	7,773	33,453	3,024	36,477
1933-34.....	18,799	11,585	21	7,235	18,204	18,200	37,003	11,568	25,435	2,779	28,214

* Data from *Monthly Summary of Foreign Commerce*. Flour converted to wheat equivalent at 4.7 bushels per barrel; this rate is somewhat too high, particularly for flour milled in bond from Canadian wheat and flour exports from the Pacific Northwest.

^a Probably understated by 7 to 9 million bushels.

TABLE XVIII.—UNITED STATES IMPORTS OF WHEAT AND FLOUR, ANNUALLY FROM 1924-25*

(Million bushels)

Crop year July-June	Withdrawn for consumption, duty-paid	Withdrawn for milling in bond	General imports		
			Wheat grain	Flour as wheat	Total
1924-25..	.27	5.81	6.17	.03	6.20
1925-26..	1.64	13.44	15.58	.08	15.66
1926-27..	.05	13.17	13.24	.03	13.27
1927-28..	.16	15.04	15.71	.03	15.74
1928-29..	.08	21.68	21.43	.01	21.44
1929-30..	.03	12.01	12.95	.01	12.96
1930-31..	.04	19.90	19.05	.01	19.06
1931-32..	.01	12.82	12.88	.00	12.88
1932-33..	...	9.27	9.38	.00	9.38
1933-34..	...	10.92	11.58	.00	11.58

* Data of U.S. Department of Commerce direct and from *Monthly Summary of Foreign Commerce of the United States*.

TABLE XIX.—CANADIAN WHEAT AND FLOUR EXPORTS, ANNUALLY FROM 1924-25*

(Million bushels)

August-July	Grand total	To United States	Total overseas	Through U.S. ports	Through Canadian ports	
					Total	Pacific
1924-25....	192.7	3.2	189.5	99.1	90.4	26.0
1925-26....	324.5	10.5	314.0	161.3	152.7	58.7
1926-27....	292.9	7.7	285.2	150.8	134.4	39.7
1927-28....	333.0	8.5	324.5	151.5	173.0	85.7
1928-29....	407.6	10.1	397.5	172.2	225.3	108.1
1929-30....	186.3	7.3	179.0	77.2	101.8	54.9
1930-31....	258.6	8.1	250.5	96.3	154.2	79.6
1931-32....	207.0	4.5	202.5	52.3	150.2	79.8
1932-33....	264.3	.3	264.0	57.0	207.0	102.2
1933-34....	194.8	.2	194.6	46.8	147.8	53.4

* Official data from *Reports on the Grain Trade of Canada and Canadian Grain Statistics*.

TABLE XX.—INTERNATIONAL SHIPMENTS OF WHEAT AND RYE (BROOMHALL) FROM 1924-25*

(Million bushels)

Year ending about Aug. 1	Wheat, including wheat flour, by areas of origin									Rye, including rye flour			
	Total	North America	Argentina ^a	Australia	All other	India	Balkans	Russia	Others ^b	North America	Russia, Danube	Other	Total
1924-25....	715.2	422.6	121.4	117.1	54.1	31.7	13.5	....	8.9	62.3	.4	.1	66.8
1925-26....	667.6	413.2	94.0	74.0	86.4	4.8	28.8	23.6	29.2	16.1	4.2	20.6 ^c	40.9
1926-27....	817.6	484.0	139.2	104.0	90.2	10.4	31.2	44.4	4.2	34.8	8.6	7.1	50.5
1927-28....	792.8	489.6	177.6	74.4	51.2	7.2	29.2	4.8	10.0	45.9	3.1	4.8	53.8
1928-29 ^d ...	927.6	542.9	223.7	112.1	48.9	.2	37.4	....	11.3	19.1	.5	12.2	31.8
1929-30....	612.5	318.4	151.9	64.6	77.6	4.2	46.8	6.4	20.2	2.3	4.8	25.1	32.2
1930-31....	786.7	354.3	123.2	154.0	155.2	3.6	37.6	98.7	15.3	4.8	22.6	12.8	40.2
1931-32....	769.6	331.2	138.4	153.2	146.8	.3	60.0	70.4	16.1	10.8	31.1	14.4	56.3
1932-33....	615.2	290.0	126.4	154.4	44.4	...	7.2	17.6	19.6	1.9	6.6	19.6	28.1
1933-34....	523.6	219.2	140.8	89.6	74.0	...	30.4	26.8	16.8 ^e	.1	9.4	19.2	28.7
Average 1928-33....	742.3	367.4	152.7	127.7	94.6	1.7	37.8	38.6	16.5	7.8	13.1	16.8	37.7

Year ending about Aug. 1	Wheat and flour to Europe				Wheat and flour to ex-Europe							
	U.K.	Orders	Continent	Total ^f	Total	China, Japan	Central America ^g	Brazil	Egypt	North and South Africa	India	Others
1924-25....	160.2	167.0	312.5	639.7	75.5	....	....	....	....	...	...	...
1925-26....	162.8	109.4	260.1	532.4	135.2	....	....	....	....	...	...	...
1926-27....	176.5	151.3	355.2	685.6	132.0	30.7	55.6	22.7	11.0	7.0	4.0	1.0
1927-28....	164.7	145.0	352.1	661.6	131.2	31.4	55.6	26.7	9.2	5.9	1.5	.9
1928-29 ^h ...	158.8	145.1	399.3	702.8	224.8	69.5	70.4	30.3	17.8	7.3	27.6	1.9
1929-30....	137.4	120.4	225.3	483.1	129.4	33.6	50.1	28.2	7.6	2.7	6.3	.9
1930-31....	131.0	193.7	282.8	607.7	179.0	67.4	58.0	26.5	11.1	4.1	11.0	.9
1931-32....	135.8	193.2	252.9	581.6	188.0	88.1	56.7	31.2	8.4	3.1	...	.5
1932-33....	161.2	127.9	159.8	448.8	166.4	91.5	34.7	29.5	3.7	1.0	1.8	4.2
1933-34....	138.5	129.8	133.2	401.6	122.0	47.5	34.3	31.3	3.6	.8	.3	4.3
Average 1928-33....	144.8	156.1	264.0	564.8	177.5	70.0	54.0	29.1	9.7	3.6	9.3	1.7

* Broomhall's cumulative totals, from the *Corn Trade News*.^a Includes Uruguay also.^b North Africa, Chile, Germany, France, etc.^c Chiefly from Germany.^d For 53 weeks.^e 9.6 million bushels from Germany.^f As reported by Broomhall in different tables.^g Includes West Indies, Dutch East Indies, Venezuela, etc.

TABLE XXI.—SUMMARY OF INTERNATIONAL TRADE IN WHEAT AND FLOUR, ANNUALLY FROM 1924-25*

(Million bushels)

Year Aug.-July	Net exports of net-exporting countries										Net imports of Europe ex-Danube, ex-Russia			
	Total	Four chief exporters	United States	Canada	Australia	Argentina	Lower Danube	USSR	India	Others ^a	Total	British Isles	France, Germany, Italy	Others
1924-25....	772	700	259	192	124	125	26	(17)	38	8	630	226	215	189
1925-26....	700	604	106	324	77	97	45	27	8	16	522	208	150	164 ^b
1926-27....	851	741	202	292	103	144	45	50	12	3	679	236	262	181 ^b
1927-28....	819	768	187	332	71	178	32	2	8	9	656	232	219	205
1928-29....	942	891	154	406	109	222	37	(6)	(25)	14	667	219	232	216
1929-30....	626	544	145	185	63	151	56	9	1	16	505	224	95	186 ^b
1930-31....	834	651	116	258	152	125	46	114	(5)	23	610	245	174	191 ^b
1931-32....	792 ^c	618 ^c	115 ^c	207	156	140	82	65	2	25	606	261	135	210 ^b
1932-33....	629	579	33	264	150	132	12	17	(1)	21	441	234	47	160 ^b
1933-34....	553	456	29	194	86	147	35	34	0	28	386	238	20 ^d	128 ^b

* Summarized from data in Table XXII. Figures in parentheses represent net imports, ignored in arriving at totals.

^a Includes Morocco, Algeria, Tunis, Chile, Spain, Poland, and Germany for years in which these countries were net exporters but not net exports from other minor exporters, notably Turkey since 1929-30, and Uruguay.^b Deducting net exports made by Spain and/or Poland in these years.^c Too low by 7-9 million bushels.^d Deducting German net exports.

TABLE XXII.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, ANNUALLY FROM 1924-25*

(Million bushels)

A. NET EXPORTS

Year Aug.-July	United States ^a	Canada	Aus- tralia	Argen- tina	Hun- gary	Yugo- slavia	Ru- mania	Bul- garia	USSR ^b	India	Al- geria	Tunis
1924-25....	259.3	192.1	123.6	125.3	13.54	9.55	3.21	(1.70)	(16.7)	38.1	(.45)	.17
1925-26....	106.2	324.2	77.2	97.3	19.79	10.81	9.93	4.37	27.1	8.0	4.57	2.65
1926-27....	201.7	292.5	102.7	144.4	21.88	9.70	11.18	2.25	49.5	11.5	(1.61)	.30
1927-28....	186.7	332.5	70.7	178.1	21.84	.55	7.46	2.04	1.6	8.5	5.30	.57
1928-29....	153.9	406.2	108.6	222.4	26.00	8.80	1.59	.28	(5.8)	(25.0)	3.28	5.31
1929-30....	144.8	184.9	62.6	151.0	30.05	22.92	2.82	(1.42)	8.8	.6	4.62	5.81
1930-31....	116.0	258.4	152.3	124.7	18.28	5.61	16.08	5.91	113.7	(4.9)	9.56	5.84
1931-32....	114.8 ^c	206.9	156.3	140.3	18.26	14.90	37.36	11.27	65.0	2.0	5.86	8.52
1932-33....	32.9	264.1	150.2	132.3	7.48	.97	.05	3.14	16.7	(.9)	8.44	5.35
1933-34....	29.2	194.4	86.2	147.1	29.32	1.05	.23	4.49	34.3	.4	12.15	(.06)
Average 1928-33....	112.5	264.1	126.0	154.1	20.01	10.64	11.58	3.84	39.7	(5.6)	6.35	6.17

B. NET IMPORTS

Year Aug.-July	Egypt	British Isles	United Kingdom	Irish Free State	France ^d	Ger- many	Italy	Belgium ^e	Nether- lands	Den- mark	Nor- way	Sweden
1924-25....	9.90	226.2	207.1	19.1	45.6	80.9 ^f	88.7	39.0	26.8	6.55	5.57	10.58
1925-26....	12.78	208.2	189.4	18.8	24.6	57.4	67.9	39.2	27.2	6.00	6.70	6.10
1926-27....	8.77	235.9	216.0	19.9	83.6	91.8	86.6	39.5	28.4	7.24	6.22	6.02
1927-28....	6.59	232.2	213.6	18.6	42.5	88.5	87.7	41.8	31.0	10.96	6.78	8.42
1928-29....	13.65	219.3	200.8	18.5	66.6	77.6	87.7	41.9	30.0	16.67	9.15	8.05
1929-30....	11.27	223.9	206.1	17.8	5.5	47.8	42.1	42.4	30.6	7.97	6.96	7.32
1930-31....	10.17	244.9	225.5	19.4	62.0	31.2	81.2	48.5	35.4	11.73	8.53	4.87
1931-32....	7.44	261.0	240.8	20.2	79.1	23.2	33.0	46.6	31.2	17.55	8.70	6.83
1932-33....	.48	234.2	216.0	18.2	32.1	4.7	10.5	39.3	27.3	12.16	8.69	3.23
1933-34....	.23	238.0	218.3	19.7	17.5	(5.4)	8.1	41.9	22.4	12.62	8.48	1.21
Average 1928-33....	8.60	236.7	217.8	18.8	49.1	36.9	50.9	43.7	30.9	13.22	8.41	6.06

B. NET IMPORTS (Continued)

Year Aug.-July	Spain	Portu- gal	Switzer- land	Austria	Czecho- slovakia	Poland	Finland	Latvia	Estonia	Lithu- ania	Greece	Japan
1924-25....	.80	4.07	13.9	14.7 ^g	21.5	17.10	4.54	1.94	.86	....	20.8	12.2
1925-26....	(.73)	5.13	15.6	14.7 ^h	21.7	(4.60)	5.23	1.56	.97	....	18.8	22.7
1926-27....	(1.01)	6.12	16.3	16.9	20.1	8.07	5.14	1.68	.91	....	19.4	15.3
1927-28....	2.92	9.96	18.4	16.5	21.4	8.62	6.04	1.51	1.12	....	19.5	16.3
1928-29....	17.20	8.86	16.6	14.6	17.4	2.45	6.93	2.99	1.25	.04	22.0	17.2
1929-30....	3.41	6.58	16.0	19.6	13.7	(.21)	5.93	2.44	1.19	(.10)	21.7	13.6
1930-31....	(.19)	2.71	18.5	16.1	17.6	(4.41)	5.27	1.55	.82	(.96)	24.1	17.8
1931-32....	10.70	2.80	21.1	13.7	24.8	(3.30)	4.51	.96	.44	(.10)	23.7	20.4
1932-33....	(.02)	1.36	19.1	13.3	12.0	(1.18)	4.46	.03	.00	(.07)	19.7	3.4
1933-34....	(.08)	.98	17.6	10.5	.2	(2.49)	4.56	.00 ⁱ	.00	(.05)	10.5	3.5
Average 1928-33....	6.22	4.46	18.3	15.5	17.1	(1.33)	5.42	1.59	.74	(.24)	22.2	14.5

* Data from official sources, in large part through International Institute of Agriculture. Figures in parentheses represent, under A, net imports, under B, net exports. Dots (...) indicate that data are not available. See Table XXV for calendar year trade data for selected countries.

^a Including shipments to possessions.

^b Grain only through 1929-30; July-June through 1927-28; gross exports in 1925-26 and 1926-27.

^c Probably understated by 7 to 9 million bushels.

^d Net imports in "commerce général," compiled directly from *Statistique mensuelle du commerce extérieur de la France*.

^e Including Luxemburg.

^f Data incomplete because of territory occupied by foreign armies.

^g Eleven months.

^h July-June.

TABLE XXIII.—INTERNATIONAL TRADE IN WHEAT FLOUR, ANNUALLY FROM 1924-25*
(Thousand barrels of 196 pounds)

A. NET EXPORTS

Year Aug.-July	Total net exports ^a	Four ex- porters ^b	United States ^c	Canada	Aus- tralia	Argen- tina	Lower Danube	Hun- gary	Yugo- slavia	Ru- mania	Bul- garia	India
1924-25....	40,950	30,815	14,475	10,108	4,626	1,606	3,341	2,025	697 ^d	619	(23)	892
1925-26....	35,738	27,628	10,130	10,847	5,009	1,642	3,441	1,817	310	849	465	685
1926-27....	35,828	30,032	13,913	9,190	5,169	1,760	3,208	1,587	302	983	336	717
1927-28....	34,254	28,228	12,226	9,792	4,381	1,829	2,664	2,108	(28)	441	115	671
1928-29....	42,009	33,307	13,992	11,732	5,845	1,738	2,886	2,615	23	197 ^d	51	497
1929-30....	35,306	26,176	13,477	6,695	4,676	1,328	3,217	2,889	162	162	4	567
1930-31....	34,526	25,348	12,314	6,677	5,307	1,050	2,415	2,045	43	215	112	525
1931-32....	29,367	21,577	8,286	5,363	7,139	789	1,959	1,086	53	437	383	426
1932-33....	26,673	17,488	4,896	5,344	6,404	844	505	441	29	7	28	172
1933-34....	27,159	16,624	4,439	5,365	5,572	1,248	826	748	28	3	47	132
Average 1928-33....	33,576	24,779	10,593	7,162	5,874	1,150	2,196	1,815	62	204	116	437

B. NET IMPORTS

Year Aug.-July	Algeria	Tunis	Egypt	British Isles	United Kingdom	Irish Free State	France ^e	Ger- many	Italy	Bel- gium ^f	Nether- lands	Spain
1924-25....	55	95	1,906	3,352	1,445	1,907	(3,295)	5,384 ^g	(1,243)	(787)	698	(59)
1925-26....	5	0 ^h	2,436	4,217	2,468	1,749	(2,309)	1,411	(334)	(151)	1,269	(157)
1926-27....	36	(24)	1,891	5,901	4,046	1,855	(772)	492	(195)	(64)	1,751	(218)
1927-28....	(98)	(9)	1,490	5,070	3,163	1,907	(1,150)	2	(207)	(145)	2,008	(82)
1928-29....	(115)	(50)	2,586	3,806	2,129	1,677	(1,752)	(401)	(441)	(176)	1,639	(74)
1929-30....	(40)	(79)	2,411	5,800	3,962	1,838	(3,202)	(263)	(666)	158	1,305	(34)
1930-31....	(107)	(123)	1,816	6,052	4,189	1,863	(3,477)	56	(492)	8	1,903	(38)
1931-32....	(51)	(64)	1,239	4,906	2,853	2,053	(2,300)	85	(995)	(11)	333	(9)
1932-33....	(230)	(59)	104	3,629	2,713	916	(1,824)	(1,103)	(1,732)	6	463	(5)
1933-34....	(406)	13	51	4,865	4,308	557	(1,631)	(2,818)	(1,800)	125	446	(16)
Average 1928-33....	(109)	(75)	1,631	4,839	3,169	1,669	(2,511)	(325)	(865)	(3)	1,129	(32)

B. NET IMPORTS (Continued)

Year Aug.-July	Den- mark	Norway	Sweden	Austria	Czecho- slovakia	Poland	Finland	Latvia	Estonia	Greece	Japan	Brazil ⁱ
1924-25....	201	560	146	1,580 ^j	3,094	3,326	973	2	129	1,324	(518)	2,087
1925-26....	495	775	(17)	1,279 ^k	3,252	43	1,115	0 ^h	76	1,506	(1,016)	2,129
1926-27....	690	611	76	1,763	1,691	76	1,098	(7)	75	1,194	(591)	2,444
1927-28....	828	754	136	1,821	2,106	84	1,293	3	76	617	(1,000)	2,345
1928-29....	782	961	150	1,386	1,978	1	1,481	4	84	376	(2,310)	2,049
1929-30....	716	701	147	1,917	1,694	(60)	1,269	(21)	63	252	(981)	1,707
1930-31....	790	710	34	1,574	1,235	(301)	1,097	(36)	44	85	(1,664)	1,306
1931-32....	651	688	19	640	598	(259)	814	0 ^h	4	34	(1,716)	258
1932-33....	395	577	4	294	219	(119)	632	0 ^h	0 ^h	11	(3,436)	147
1933-34....	291	473	2	506	8	(144)	585	0 ^{h,j}	0 ^h	7	(2,762)	...
Average 1928-33....	667	727	71	1,162	1,145	(148)	1,059	(11)	39	152	(2,021)	1,093

* Data from official sources, in large part through International Institute of Agriculture. Figures in parentheses represent, under A, net imports, under B, net exports. Dots (...) indicate that data are not available.

^a Sum of net exports of net-exporting countries in the years in which they were net exporters.

^b United States, Canada, Australia, and Argentina.

^c Including shipments to possessions.

^d Gross exports.

^e Exports in "commerce général," compiled directly from *Statistique mensuelle du commerce extérieur de la France*.

^f Including Luxemburg.

^g Data incomplete because of territory occupied by foreign armies.

^h Net imports of less than 500 barrels.

ⁱ July-June gross imports.

^j Eleven months.

^k July-June net imports.

TABLE XXIV.—EXPORTS OF WHEAT AND FLOUR TO SPECIFIED ex-EUROPEAN COUNTRIES FROM PRINCIPAL SOURCES OF EXPORTS, ANNUALLY FROM 1924-25*

(Million bushels)

A. TO JAPAN FROM NORTH AMERICA AND AUSTRALIA

July-June	Wheat and flour			Total from			Wheat from			Flour from		
	Total	Wheat	Flour	United States	Canada	Australia	United States	Canada	Australia	United States	Canada	Australia
1924-25....	14.89	14.55	.34	4.35	3.51	7.03	4.10	3.43	7.02	.25	.08	.01
1925-26....	29.66	29.07	.59	5.28	13.48	10.90	5.18	13.03	10.86	.10	.45	.04
1926-27....	19.97	19.27	.70	7.34	8.30	4.33	7.34	7.63	4.30	.00	.67	.03
1927-28....	20.79	20.09	.70	6.30	11.25	3.24	6.30	10.59	3.20	.00	.66	.04
1928-29....	31.55	31.32	.23	3.78	22.11	5.66	3.78	21.91	5.63	.00	.20	.03
1929-30....	18.81	18.07	.74	9.17	6.79	2.85	9.17	6.09	2.81	.00	.70	.04
1930-31....	29.17	28.19	.98	3.24	8.21	17.72	3.06	7.45	17.68	.18	.76	.04
1931-32....	31.44	30.48	.96	1.79	8.11	21.54	1.65	7.37	21.46	.14	.74	.08
1932-33....	22.68	21.89	.79	.13	4.47	18.08	.12	3.87	17.90	.01	.60	.18
1933-34....	19.11	17.65	1.46	5.74	5.38	7.99	5.74	4.19	7.72	.00	1.19	.27
Average 1928-33....	26.73	25.99	.74	3.62	9.94	13.17	3.56	9.34	13.10	.07	.60	.07

B. TO CHINA, HONG KONG, AND KWANTUNG FROM NORTH AMERICA, AUSTRALIA, AND JAPAN

July-June	Wheat and flour			Total from		Wheat from			Flour from			
	Total	Wheat	Flour	United States	Canada	United States	Canada	Australia	United States	Canada	Australia	Japan ^a
1924-25....	7.70	.57	7.13	3.29	1.72	.37	.20	.00	2.92	1.52	.65	2.04
1925-26....	24.95	8.12	16.83	5.29	13.72	.00	7.69	.43	5.29	6.03	.47	5.04
1926-27....	17.36	4.24	13.12	6.06	6.96	.30	3.94	.00	5.76	3.02	.21	4.13
1927-28....	20.12	1.26	18.86	8.72	6.11	.00	1.26	.00	8.72	4.85	.29	5.00
1928-29....	49.57	12.56	37.01	13.18	22.47	1.25	8.61	2.70	11.93	13.86	.15	11.17
1929-30....	22.32	1.29	21.03	10.52	6.05	.16	1.13	.00	10.36	4.92	.15	5.60
1930-31....	54.58	33.55	21.03	12.34	9.21	1.88	7.27	24.40	10.46	1.94	.38	8.25
1931-32....	72.13	48.90	23.23	25.20	5.18	14.37	3.53	31.00	10.83	1.65	2.88	7.87
1932-33....	71.94	41.81	30.13	2.78	9.73	.01	8.06	33.74	2.77	1.67	10.04	15.65
1933-34....	32.93	12.14	20.79	11.67	1.42	10.30	.36	1.48	1.37	1.06	5.09	13.27
Average 1928-33....	54.11	27.62	26.49	12.80	10.53	3.53	5.72	18.37	9.27	4.81	2.72	9.71

C. TO BRAZIL FROM NORTH AMERICA AND ARGENTINA

D. TO EGYPT FROM NORTH AMERICA AND AUSTRALIA

July-June	Wheat and flour			Wheat and flour from			Wheat and flour			Wheat and flour from		
	Total	Wheat	Flour	United States	Canada	Argentina	Total	Wheat	Flour	United States ^b	Canada ^b	Australia ^c
1924-25....	20.50	13.16	7.34	3.24	.15	17.11	11.56	1.89	9.67	.92	.46	10.18
1925-26....	21.94	13.52	8.42	4.06	1.00	16.88	12.28	.67	11.61	1.44	.76	10.08
1926-27....	28.07	19.03	9.04	7.37	1.20	19.50	15.83	4.62	11.21	1.58	.67	13.58
1927-28....	31.77	22.64	9.13	4.10	.17	27.50	12.55	3.83	8.72	.82	.62	11.11
1928-29....	34.25	25.80	8.45	3.91	.05	30.29	19.57	4.94	14.63	1.03	1.65	16.89
1929-30....	30.83	23.73	7.10	3.67	.04	27.12	9.39	1.85	7.54	.99	.22	8.18
1930-31....	28.24	23.08	5.16	4.03	.34	23.87	11.38	3.14	8.24	.87	.12	10.39 ^d
1931-32....	30.89	29.98	.91	15.23	.00	15.66	7.98	1.64	6.34	.76	.04	7.18 ^d
1932-33....	27.15	26.40	.75	9.30	.00	17.85	3.77	1.04	2.73	.62	.03	3.10 ^d
1933-34....	28.05	23.97	4.08	.92	.28	26.85	2.59	.00	2.59	.63	.02	1.94 ^b
Average 1928-33....	30.27	25.80	4.47	7.23	.09	22.96	10.42	2.52	7.90	.85	.41	9.15

* Data from official statistics of exporting countries. Argentine exports to China, of some importance in 1932-33 and 1933-34, not included.

^a Total flour exports, the bulk of which go to China and Kwantung.

^b Flour as wheat only.

^c Exports from Australia to Egypt and Sudan, except as noted.

^d Australian exports of wheat to Egypt; Australian flour exports to Egypt and Sudan.

TABLE XXIV (Continued).—EXPORTS OF WHEAT AND FLOUR TO SPECIFIED EX-EUROPEAN COUNTRIES FROM PRINCIPAL SOURCES OF EXPORTS, ANNUALLY FROM 1924-25

(Million bushels)

E. TO WEST INDIES FROM NORTH AMERICA

F. TO SOUTH AFRICA FROM CANADA AND AUSTRALIA

July-June	Total flour ^c	Flour from		Wheat and flour			Total from		Wheat from		Flour from	
		United States	Canada	Total	Wheat	Flour	Canada	Australia	Canada	Australia	Canada	Australia
1924-25....	12.82	9.23	3.59	5.60	4.09	1.51	.71	4.89	.42	3.67	.29	1.22
1925-26....	12.94	8.24	4.70	4.70	3.37	1.33	.49	4.21	.25	3.12	.24	1.09
1926-27....	13.22	9.19	4.03	3.58	2.36	1.22	.66	2.92	.35	2.01	.31	.91
1927-28....	13.30	8.93	4.37	8.84	7.44	1.40	.84	8.00	.50	6.94	.34	1.06
1928-29....	14.62	9.49	5.13	7.78	6.29	1.49	2.46	5.32	2.15	4.14	.31	1.18
1929-30....	12.69	8.77	3.92	3.23	2.14	1.09	.81	2.42	.60	1.54	.21	.88
1930-31....	11.72	7.33	4.39	5.14	4.51	.63	3.75	1.39	3.55	.96	.20	.43
1931-32....	10.69	6.78	3.91	4.08	3.99	.09	3.56	.52	3.53	.46	.03	.06
1932-33....	9.41	5.52	3.89	.26	.23	.03	.23	.03	.21	.02	.02	.01
1933-34....	9.50	5.60	3.90	.08	.07	.01	.04	.04	.03	.04	.01	...
Average 1928-33....	11.83	7.58	4.25	4.10	3.43	.67	2.16	1.94	2.01	1.42	.15	.51

^c Flour only, as wheat exports to the West Indies are negligible.

TABLE XXV.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, AND APPARENT DOMESTIC UTILIZATION, IN SPECIFIED COUNTRIES, BY CALENDAR YEARS FROM 1924*

(Million bushels)

Year	China	Brazil ^a	Uruguay ^a	Chile ^a	South Africa ^a	New Zealand ^a	Morocco ^b
NET IMPORTS (NET EXPORTS IN PARENTHESES)							
1924..	31.50	28.91	(5.18)	(7.20)	7.70	3.55	(1.66)
1925..	9.11	27.74	(2.28)	(5.12)	6.13	2.64	(.72)
1926..	22.45	31.52	(1.32)	(1.05)	4.54	2.97	(.78)
1927..	14.42	32.60	(1.94)	.30	5.81	1.42	(2.42)
1928..	16.73	36.53	(6.05)	(.54)	8.81	1.21	(4.05)
1929..	48.61	35.94	(4.28)	(.29)	7.70	.52	(4.09)
1930..	22.55	31.79	(2.69)	(1.90)	2.80	.73	(1.01)
1931..	66.03	32.46	.62	(.10)	3.41	.74	(5.62)
1932..	51.94	28.62	.07	.60	.93	1.98	(5.99)
1933..	50.54	33.79	...	3.22	(.08)	(.14)	(7.60)
APPARENT DOMESTIC UTILIZATION							
1924..	....	33.23	8.16	20.89	13.67	7.73	27.09
1925..	....	31.64	7.63	19.35	13.26	8.09	23.15
1926..	....	37.19	8.70	25.62	13.75	7.59	19.80
1927..	....	37.56	8.30	23.60	13.85	9.37	21.13
1928..	....	41.16	9.35	30.07	14.49	10.75	20.70
1929..	....	40.57	8.02	29.39	14.94	9.35	27.67
1930..	....	38.06	10.47	31.63	13.43	7.97	20.29
1931..	....	37.44	7.99	21.09	12.71	8.32	24.16
1932..	....	....	11.33	21.79	14.64	8.56	21.98
1933..	....	....	....	29.33	10.55	10.92	21.30

* Trade data from *International Yearbooks of Agricultural Statistics*, U.S. Department of Agriculture, and *Foreign Trade of China* (Maritime Customs).

^a Crop of 1923 plus net imports or minus net exports of 1924, and following.

^b Crop of 1924 minus net exports of 1924, and following.

TABLE XXVI.—OCEAN FREIGHTS ON WHEAT TO EUROPE, ANNUAL AND MONTHLY AVERAGES*

(U.S. gold cents per bushel)

Period	Canada ^a	New York ^b	North-ern Pa-cific ^c	Black Sea ^d	La Plata down river ^e	Kara-chi ^f	Australia ^g
Jan.-Dec. 1913.....	8.3	5.8	25.7	...	10.6	12.2	20.4
Aug.-July 1924-25....	9.4	6.3	21.3	...	12.0	14.7	25.2
1925-26....	9.0	7.0	20.0	...	10.9	13.1	22.3
1926-27....	12.0	9.7	23.9	...	19.9	15.8	28.5
1927-28....	7.7	5.6	19.5	...	13.9	13.2	23.2
1928-29....	8.5	6.1	19.6	...	14.9	13.1	23.1
1929-30....	5.5 ^d	4.7	14.7	...	8.3	9.9 ^a	16.7
1930-31....	5.6 ^d	4.6	14.5	7.1	10.9	12.5	19.3
1931-32....	4.9 ^d	3.9	12.1 ^d	5.5	8.2	11.2 ^d	13.2
1932-33....	3.8 ^d	3.1	9.5 ^d	4.5	6.3	n.q.	11.1
1933-34....	2.6 ^d	2.9	7.8 ^d	4.2 ^d	5.8	n.q.	10.0
July	2.6 ^e	2.7	n.q.	4.5	6.2	n.q.	10.3
Aug.	2.7	2.6	8.2	4.1	6.2	n.q.	10.5 ^f
Sept.	2.6	2.7	7.8	4.3	5.0 ^f	n.q.	9.7 ^e
Oct.	2.9	2.9	7.7	4.5	5.4	n.q.	10.0 ^f
Nov.	3.0	3.0	8.4	4.5	6.0	n.q.	10.5
Dec.	n.q.	3.1	8.5	4.7	6.7	n.q.	11.2
Jan.	n.q.	3.0	8.6	4.6	6.4	n.q.	10.7
Feb.	n.q.	3.3	8.2	4.4	6.1	n.q.	10.0
Mar.	n.q.	3.3	7.8	4.3	5.7	n.q.	9.1
Apr.	n.q.	2.8	7.9	4.0	5.6	n.q.	9.2
May	2.6	2.9	7.7	3.8 ^g	5.4	n.q.	9.6
June	2.4	2.8	n.q.	n.q.	5.9	n.q.	9.7
July	2.3	2.8	6.4 ^g	3.7	5.8	n.q.	9.8

* Averages of Friday rates published in *International Crop Report and Agricultural Statistics*. New York-Liverpool rates are for parcels in liners; others for cargoes. Dots (....) indicate that data are unavailable; n.q. indicates that no rate is reported.

^a To United Kingdom.

^b To Liverpool.

^c To Antwerp and Hamburg.

^d Average of rates for months in which quotations are available: months with "no quotation" are not necessarily the same for different routes, or for different years on the same route.

^e Two-week average.

^f Three-week average.

^g One week only.

TABLE XXVII.—NET EXPORTS AND NET IMPORTS OF WHEAT AND FLOUR, MONTHLY FROM AUGUST 1933*
(Million bushels)

A. NET EXPORTS

Month	United States ^a	Canada	Argentina	Australia	Four exporters	USSR	Hungary	Yugoslavia	Rumania	Bulgaria	Poland	Algeria	Tunis	India
Aug. ....	.99	10.78	16.33	8.10	36.20	2.25	1.82	.06	.01	.27	.06	1.36	.36	.05
Sept. ....	.72	22.13	7.15	7.26	37.26	6.23	4.37	.13	.00	.72	(.02)	1.16	.12	.07
Oct. ....	.57	25.60	5.79	4.79	36.75	5.74	3.67	.17	.07	.44	(.12)	1.01	(.20)	.05
Nov.	1.14	25.60	3.86	5.72	36.32	5.99	3.90	.02	.05	.51	(.17)	1.00	(.13)	(.09)
Dec.	5.31	19.32	6.30	7.57	38.50	7.04	1.67	.01	.10	.65	(.15)	1.01	(.15)	.08
Jan.	3.95	9.10	15.23	9.69	37.97	2.87	2.01	.02	.00	.12	.06	.81	(.10)	.06
Feb.	3.46	7.97	17.23	9.54	38.20	1.50	1.70	.01	.00	.10	.18	1.29	(.32)	.06
Mar.	3.90	12.28	17.40	7.00	40.58	.99	3.87	.10	(.00)	.90	.23	1.22	(.29)	.08
Apr.	4.80	5.08	10.43	5.23	25.56	.51	2.87	.08	.01	.43	.16	1.20	(.23)	.04
May	1.94	21.17	14.01	5.62	42.77	.80	1.79	.01	(.00)	.34	.42	.44	(.08)	.03
June ....	.70	20.33	16.38	7.89	45.35	.37	1.47	.20	.00	.01	.68	.63	.36	.06
July	1.63	14.70	17.00	7.73	41.06	.50	.18	.21	.00	.00	1.17	1.02	.58	(.07)

B. NET IMPORTS

Month	British Isles			Three variable importers				Belgium ^c	Netherlands	Scandinavia				Switzerland
	U.K.	I.F.S.	Total	Total	France ^b	Germany	Italy			Denmark	Norway	Sweden	Total	
Aug.	17.15	2.09	19.24	2.81	1.98	.27	.56	3.89	2.69	1.38	.63	.16	2.17	1.55
Sept.	21.14	1.74	22.88	(1.05)	.89	(1.81)	(.13)	2.55	4.34	1.69	.65	.22	2.56	2.24
Oct.	20.83	2.26	23.09	.90	1.78	(1.22)	.34	3.41	3.40	1.10	1.04	.18	2.32	1.84
Nov.	20.66	1.24	21.90	.30	1.92	(2.21)	.59	4.14	2.23	1.52	1.04	.19	2.75	1.50
Dec.	16.73	1.23	17.96	.37	2.25	(2.16)	.28	2.76	.98	.97	.35	.11	1.43	1.39
Jan.	12.93	.97	13.90	1.22	1.55	(.84)	.51	3.32	.37	.71	.64	.15	1.50	1.27
Feb.	15.07	1.24	16.31	3.34	1.64	.40	1.30	3.47	.55	.53	.19	.14	.86	.96
Mar.	20.05	2.15	22.20	3.35	1.76	.24	1.35	4.91	1.23	.80	.62	.14	1.56	1.05
Apr.	18.89	1.75	20.64	2.46	1.47	(.25)	1.24	3.85	1.41	.71	.57	.18	1.46	1.24
May	18.68	1.77	20.45	1.65	.25	.36	1.04	3.21	1.75	.96	1.13	.14	2.23	1.32
June	17.49	1.55	19.04	2.14	.95	.68	.51	3.15	1.93	.67	.95	.09	1.71	1.72
July	19.17	1.73	20.90	2.76	1.04	1.19	.53	3.25	1.47	1.59	.68	(.50)	1.77	1.52

B. NET IMPORTS (Continued)

Month	Austria	Czechoslovakia	Greece	Spain	Portugal	Finland	Latvia	Estonia	Lithuania	Four Baltic States	Egypt	Japan	New Zealand	South Africa
Aug. ....	.88	.15	1.34	(.00)	.08	.49	.00	.00	(.01)	.48	.01	.26	(.14)	{.00
Sept. ....	.37	.00	1.40	(.01)	.06	.34	.00	.00	(.01)	.33	.03	.09		{.01
Oct. ....	.81	.00	1.07	(.01)	.05	.39	.00	.00	(.00)	.39	.01	(.01)		{.00
Nov. ....	.69	.01	.92	(.01)	.08	.32	.00	.00	(.01)	.31	.03	(.01)	.06	.01
Dec. ....	.71	.00	.52	(.01)	.09	.30	.00	.00	(.00)	.30	.02	(.51)	.04	.00
Jan. ....	.63	.00	.85	(.00)	.08	.33	.00	.00	(.00)	.33	.04	{.68	.07	.01
Feb. ....	.84	.00	.75	(.01)	.08	.34	.00	.00	(.01)	.33		{.96		
Mar. ....	.72	.00	.72	.00	.12	.33	.00	.00	.00	.33	.02	.63	.05	.01
Apr.	1.14	.00	.89	.00	.09	.34	.00	.00	.00	.34	.02	.80	.14	.02
May	1.53	.00	.86	.00	.10	.47	.00	.00	.00	.47	.02	.68		
June	1.24	.00	.86	(.01)	.07	.45	.00	.00	.00	.45	.02	.14	.03	.00
July ....	.91	.01	.33	.00	.10	.45	...	.00	.00	.45	.02	.13	.07	...

* Data from official sources and International Institute of Agriculture. Dots (...) indicate data are not available. Figures in parentheses represent: under A, net imports; under B, net exports.

^a Includes shipments to possessions.

^c Including Luxemburg.

^b Net imports in "commerce général."

TABLE XXVIII.—UNITED STATES FLOUR PRODUCTION, NET EXPORTS AND SHIPMENTS, AND DOMESTIC DISAPPEARANCE, MONTHLY FROM JULY 1924*

(Thousand barrels)

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
A. REPORTED PRODUCTION, ALL REPORTING MILLS													
1924-25.....	8,465	9,842	10,459	11,371	9,187	8,855	9,853	8,248	7,347	6,781	6,942	7,745	105,095
1925-26.....	8,840	9,293	9,938	10,728	9,128	8,948	8,679	7,429	8,289	7,589	7,418	8,005	104,284
1926-27.....	9,570	10,447	10,843	10,678	9,618	8,909	8,624	8,023	8,936	8,309	8,497	8,528	110,982
1927-28.....	8,388	9,617	10,470	10,817	9,735	9,235	9,242	8,975	9,772	8,507	8,712	7,758	111,228
1928-29.....	8,516	10,370	10,512	11,587	9,909	9,269	10,014	9,026	9,207	8,636	9,334	8,912	115,292
1929-30.....	9,337	11,058	10,372	10,968	9,538	8,905	9,510	8,783	9,347	9,071	8,981	8,687	114,557
1930-31.....	9,466	10,313	10,674	10,816	9,184	8,973	9,233	8,242	8,724	8,494	8,015	7,762	109,896
1931-32.....	9,852	9,658	9,735	10,399	9,890	8,148	8,180	7,692	8,483	8,196	7,739	7,820	105,792
1932-33.....	7,828	9,005	9,395	9,382	8,719	8,323	8,077	7,216	8,867	9,298	8,777	8,579	103,466
1933-34.....	8,275	6,719	7,540	8,181	8,116	7,332	8,719	7,867	8,362	7,455	8,103	7,507	94,176
B. ESTIMATED TOTAL UNITED STATES PRODUCTION													
1924-25.....	9,503	11,022	11,694	12,691	10,249	9,870	10,968	9,215	8,217	7,606	7,780	8,655	117,470
1925-26.....	9,869	10,374	11,094	11,957	10,181	9,974	9,671	8,276	9,213	8,438	8,242	8,868	116,157
1926-27.....	10,572	11,520	11,940	11,761	10,582	9,800	9,471	8,809	9,801	9,100	9,334	9,358	122,048
1927-28.....	9,196	10,506	11,417	11,766	10,565	10,009	9,971	9,696	10,526	9,166	9,365	8,377	120,560
1928-29.....	9,186	11,164	11,327	12,449	10,577	9,905	10,682	9,648	9,840	9,236	9,974	9,568	123,556
1929-30.....	9,988	11,810	11,084	11,715	10,179	9,510	10,182	9,411	9,993	9,690	9,602	9,289	122,453
1930-31.....	10,128	11,013	11,395	11,534	9,808	9,575	9,891	8,840	9,351	9,107	8,599	8,331	117,572
1931-32.....	10,548	10,342	10,424	11,128	10,588	8,741	8,774	8,257	9,096	8,792	8,307	8,393	113,390
1932-33.....	8,401	9,649	10,062	10,049	9,346	8,926	8,666	7,752	9,503	9,960	9,397	9,195	110,906
1933-34.....	8,875	7,225	8,096	8,776	8,706	7,875	9,347	8,442	8,967	8,006	8,693	8,060	101,068
C. NET EXPORTS AND SHIPMENTS TO POSSESSIONS													
1924-25.....	831	994	1,511	1,909	1,653	1,510	1,059	975	1,426	1,013	746	858	14,485
1925-26.....	821	910	854	1,060	935	1,047	726	696	733	884	737	699	10,102
1926-27.....	848	1,403	1,617	1,429	1,399	1,270	1,084	905	934	1,062	1,162	914	14,027
1927-28.....	836	1,096	1,317	1,558	1,383	1,172	1,289	1,000	1,053	1,044	905	724	13,377
1928-29.....	683	1,001	1,066	1,436	1,261	998	1,429	1,273	1,245	1,118	986	1,051	13,547
1929-30.....	1,127	1,161	1,200	1,376	1,150	1,165	1,298	971	1,101	985	1,085	997	13,616
1930-31.....	989	1,266	1,461	1,387	1,203	945	996	808	775	811	838	840	12,319
1931-32.....	1,048	692	768	825	905	942	903	753	652	582	388	469	8,927
1932-33.....	400	460	420	416	537	447	392	344	392	292	383	425	4,908
1933-34.....	337	416	362	352	338	428	415	325	422	469	322	266	4,452
D. CALCULATED DOMESTIC DISAPPEARANCE													
1924-25.....	8,672	10,028	10,183	10,782	8,596	8,360	9,909	8,240	6,791	6,593	7,034	7,797	102,985
1925-26.....	9,048	9,464	10,240	10,897	9,246	8,927	8,945	7,580	8,480	7,554	7,505	8,169	106,055
1926-27.....	9,724	10,117	10,323	10,332	9,183	8,530	8,387	7,904	8,867	8,038	8,172	8,444	108,021
1927-28.....	8,360	9,410	10,100	10,208	9,182	8,837	8,682	8,696	9,473	8,122	8,460	7,653	107,183
1928-29.....	8,503	10,163	10,261	11,013	9,316	8,907	9,253	8,375	8,595	8,118	8,988	8,517	110,009
1929-30.....	8,861	10,649	9,884	10,339	9,029	8,345	8,884	8,440	8,892	8,705	8,517	8,292	108,837
1930-31.....	9,139	9,747	9,934	10,147	8,605	8,630	8,895	8,032	8,576	8,296	7,761	7,491	105,253
1931-32.....	9,500	9,650	9,656	10,303	9,683	7,799	7,871	7,504	8,444	8,210	7,919	7,924	104,463
1932-33.....	8,001	9,189	9,642	9,633	8,809	8,479	8,274	7,408	9,111	9,662	9,014	8,770	105,998
1933-34.....	8,538	6,809	7,734	8,424	8,368	7,447	8,932	8,117	8,545	7,537	8,371	7,794	96,616

* Reported production and trade data from U.S. Department of Commerce, *Wheat Ground and Wheat Milling Products, Monthly Summary of Foreign Commerce, Foodstuffs Round the World*, and Statements Nos. 3009, 3013, and 3015. The figures for total United States production represent estimates of output of those commercial mills included in biennial censuses, plus an allowance of 100,000 barrels per month for custom and very small commercial mills. The estimates, clearly about correct up to 1929-30, run too low in later years; but the method of estimation has been retained for lack of an adequate basis for revision. See text, p. 138.

TABLE XXIX.—WHEAT SUPPLIES AND DISPOSITION IN FOUR CHIEF EXPORTING COUNTRIES, FROM 1922-23*
(Million bushels)

A. UNITED STATES (JULY-JUNE)

Year	Supplies			Domestic disappearance					Surplus over domestic use	Net exports ^g	Shipments to possessions ^g	Year-end stocks ^a
	Initial stocks ^a	Crop ^b	Total ^c	Milled (net) ^d	Seed use ^b	Fed on farms ^b	Residual ^e	Total ^f				
1922-23.....	117	847	964	468	84	49	+ 9	610	354	205	2.9	146
1923-24.....	146	759	905	475	74	67	+11	627	278	132	3.0	143
1924-25.....	143	840	983	479	81	56	- 5	611	372	255	2.9	114
1925-26.....	114	669	783	498	80	28	-24	582	201	93	2.7	105
1926-27.....	105	834	939	501	85	34	- 8	612	327	206	3.1	118
1927-28.....	118	875	993	503	91	44	+41	679	314	191	2.7	120
1928-29.....	120	913	1,033	511	85	55	- 4	647	386	142	3.2	241
1929-30.....	241	822	1,063	509	84	59	-36	616	447	140	3.0	304
1930-31.....	304	890	1,194	493	81	158	+22	754	440	112 ^h	2.9	325
1931-32.....	325	932	1,257	486	80	171	+ 8	745	512	124 ^h	2.8	385
1932-33.....	385	744	1,129	493	83	123	+ 3	702	427	33	3.0	391
1933-34.....	391	528	919	449	76	71	+ 5	601	318	25	2.8	290

B. CANADA (AUGUST-JULY)

Year	Supplies			Domestic disappearance						Surplus over domestic use	Net exports ^g	Year-end stocks ^a
	Initial stocks ^a	Crop ^b	Total ^c	Milled (net) ^d	Seed use ^b	Unmer- chantable ^b	Loss in cleaning ^b	Residual ^e	Total ^f			
1922-23.....	40	400	440	41	40	10	12	+26	129	311	279	32
1923-24.....	32	474	506	42	39	19	12	+ 3	115	391	346	45
1924-25.....	45	262	307	42	38	12	10	-14	88	219	192	27
1925-26.....	27	395	422	42	40	11	6	-37	62	360	324	36
1926-27.....	36	407	443	43	39	12	19	-11	102	341	293	48
1927-28.....	48	480	528	42	42	28	7	- 2	117	411	333	78
1928-29.....	78	567	645	44	44	30	13	+ 4	135	510	406	104
1929-30.....	104	305	409	43	44	7	7	+12	113	296	185	111
1930-31.....	111	421	532	42	39 ⁱ	45 ^j	8	+ 6	140	392	258	134
1931-32.....	134	321	455	42	37 ⁱ	28 ^j	6	+ 3	116	339	207	132
1932-33.....	132	443	575	42	36 ⁱ	24 ^j	7	-10	99	476	264	212
1933-34.....	212	270	482	44	33 ⁱ	20 ^j	5	- 7	95	387	194	193

* Based on official data so far as possible.

^a See Table XIII.^b Latest official estimates of U.S. Department of Agriculture and Dominion Bureau of Statistics, respectively.^c Exclusive of imports, which are taken into account in arriving at net exports.^d Wheat equivalent of flour production less flour exports. For the United States, Food Research Institute estimates corresponding to final column in Table XXVIII; for Canada, official estimates of "wheat milled for food." Estimates for the United States are probably too low in the last four years; see footnote to Table XXVIII.^e Difference between total domestic disappearance and the sum of other disappearance items. This is normally a positive item representing dockage (U.S.), feed elsewhere than on farms where grown, and use of wheat in prepared breakfast foods, in mixed feeds, and in industry; but it is

determined in part by errors in estimates of stocks, crops, specified domestic use items, and net exports. Negative items (e.g., Canada, 1924-27) ordinarily imply more or less underestimate of the crop and/or overestimates of amount fed on farms.

^f Total supplies less net exports (and for the United States, shipments to possessions) and year-end stocks.^g Official trade data, as in Tables XVII, XXII.^h Too low; does not include some wheat shipped to Canada.ⁱ Probably too low for close comparison with figures of earlier years on account of a change in the estimated seed requirement per acre.^j Including merchantable wheat fed to livestock on farms estimated at 41 million bushels in 1930-31, 27 million in 1931-32, 22 million in 1932-33, and 17 million in 1933-34.

TABLE XXIX (Continued).—WHEAT SUPPLIES AND DISPOSITION IN FOUR CHIEF EXPORTING COUNTRIES, FROM 1922-23*

C. AUSTRALIA (AUGUST-JULY)

Year	Supplies			Domestic disappearance				Surplus over domestic use	Net exports ^b	Estimated year-end stocks		
	Initial stocks ^a	Crop ^b	Total ^c	Milled (net) ^d	Seed use ^e	Residual ^f	Total ^g			Aug. 1 total ^h	Aug. 1 ex- portable ⁱ	Nov. 30 total ^j
1922-23.....	24	109	133	28	10	+12	50	83	50	33	24	6
1923-24.....	33	125	158	28	11	- 1	38	120	86	34	25	9
1924-25.....	34	165	199	30	11	+ 6	47	152	124	28	18	5
1925-26.....	28	115	143	33	12	- 5	42	101	77	24	13	7
1926-27.....	24	161	185	31	12	+ 4	47	138	103	35	25	12
1927-28.....	35	118	153	32	15	- 1	46	107	71	36	25	9
1928-29.....	36	160	196	29	15	+ 2	46	150	109	41	31	16
1929-30.....	41	127	168	32	18	+ 6	56	112	63	49	38	14
1930-31.....	49	214	263	34	14	+ 3	51	212	152	60	49	16
1931-32.....	60	191	251	32	15	- 3	45	206	156	50	40	12
1932-33.....	50	214	264	33	15	+11	59	205	150	55	44	18
1933-34.....	55	174	229	33	13	+12	58	171	86	85	74	35

D. ARGENTINA (AUGUST-JULY)

Year	Supplies			Domestic disappearance				Surplus over domestic use	Net exports ^b	Estimated stocks		
	Initial stocks ^a	Crop ^b	Total ^c	Milled (net) ^d	Seed use ^e	Residual ^f	Total ^g			Aug. 1 total ^h	Aug. 1 ex- portable ⁱ	Dec. 31 total ^j
1922-23.....	61	196	257	44	21	-11	54	203	139	64	44	10
1923-24.....	64	248	312	49	21	+ 3	73	239	173	66	44	10
1924-25.....	66	191	257	53	23	- 2	74	183	125	58	35	10
1925-26.....	58	191	249	54	23	+ 8	85	164	97	67	43	35
1926-27.....	67	230	297	57	25	+ 2	84	213	144	69	44	15
1927-28.....	69	282	351	60	25	- 7	78	273	178	95	70	15
1928-29.....	95	349	444	60	23	+ 9	92	352	222	130	105	20
1929-30.....	130	163	293	60	26	- 9	77	216	151	65	40	20
1930-31.....	65	232	297	63	21	+ 9	93	204	124	80	54	20
1931-32.....	80	220	300	65	24	+ 6	95	205	140	65	38	14
1932-33.....	65	235	300	65	24	+ 4	93	207	132	75	48	10
1933-34.....	75	286	361	67	22	+ 7	96	265	147	118	90	15

* Based on official data so far as possible.

^a Australia: November 30 official estimates of total stocks (last column), plus August-November net exports, plus $\frac{1}{2}$ of net mill grindings (column 4). Argentina: stocks on December 31 (last column), plus August-December net exports, plus $\frac{1}{2}$ of net mill grindings (column 4).

^b Official data.

^c Exclusive of imports, which are taken into account in arriving at net exports.

^d Australia: official data for July-June years to 1930-31; our estimates thereafter. Argentina: our estimates based on official data of flour milled minus flour exports in calendar years 1922-32.

^e Australia: official data prior to 1928-29, for sowings of wheat both for grain and for hay; our estimates from 1928-29. Argentina: based on official data on acreage sown and average seed requirements.

^f See footnote e, p. 191; here including feed use.

^g Total supplies less net exports and year-end stocks.

^h Official trade data, as in Table XXII.

ⁱ Preceding column minus $\frac{1}{2}$ of net mill grindings for Australia, $\frac{1}{2}$ of net mill grindings for Argentina.

^j Australia: official estimates 1925-33; our approximations 1923-24 and 1933-34. Argentina: rough approximations to December 31 stocks of old-crop wheat, based largely upon estimates by the *Times of Argentina*.

TABLE XXX.—APPARENT DOMESTIC UTILIZATION OF WHEAT (CARRYOVERS DISREGARDED) IN OTHER IMPORTANT COUNTRIES, FROM 1924-25*

(Million bushels)

Aug.-July	India	Hun- gary	Yugo- slavia	Ru- mania	Bul- garia	Poland	Algeria	Tunis	Egypt	British Isles	France	Ger- many	Italy	Bel- gium ^a
1924-25.....	322.5	38.1	48.2	67.2	26.4	54.6	17.7	4.9	44.1	280.1	326.8	170.1 ^b	258.8	52.3
1925-26.....	323.0	51.9	67.8	94.8	37.0	59.3	28.1	9.2	49.0	261.9	354.9	175.6 ^b	308.7	54.2
1926-27.....	313.2	53.0	61.7	99.7	34.3	60.6	25.2	12.7	46.0	288.1	315.4	187.2 ^b	307.2	52.9
1927-28.....	326.5	55.1	56.0	89.2	40.1	69.7	23.0	7.5	50.9	289.4	318.6	209.0 ^b	283.5	58.8
1928-29.....	315.9	73.2	94.5	113.9	48.9	61.6	27.0	8.4	50.9	270.2	347.9	219.2	316.3	59.8
1929-30.....	320.2	45.0	72.1	97.0	34.6	65.7	28.7	6.5	56.5	274.8	342.8	170.9	302.2	55.9
1930-31.....	395.5	66.0	74.7	114.7	51.4	77.9	22.8	4.6	50.0	288.3	290.1	170.4	291.3	62.2
1931-32.....	345.4	54.3	83.9	97.9	52.5	79.9	19.7	5.5	53.5	299.6	343.2	178.7	277.4	60.8
1932-33.....	337.8	57.0	52.4	55.4	45.0	48.3	20.8	12.1	53.1	278.6	365.6	188.5	287.4	55.4
1933-34.....	352.4	67.1	95.6	118.9	54.4	77.4	19.8	9.3	40.2	302.4	379.8	200.5	306.1	58.0
Average 1928-33.....	342.9	59.1	75.5	95.8	46.5	66.7	23.6	7.4	52.8	282.3	357.9	185.5	294.9	58.8

Aug.-July	Nether- lands	Den- mark	Nor- way	Sweden	Spain	Portu- gal	Switzer- land	Aus- tria	Czecho- slovakia	Fln- land	Latvia	Estonia	Lithu- ania	Greece
1924-25.....	31.4	12.5	6.06	17.4	122.6	14.7	17.2	23.2 ^c	53.7	5.33	3.52	1.40	....	28.5
1925-26.....	32.8	15.7	7.19	19.5	161.9	17.6	19.4	25.4	61.0	6.16	3.72	1.76	....	30.0
1926-27.....	33.9	16.0	6.81	18.2	145.6	14.7	20.3	26.3	60.0	6.06	3.54	1.79	....	31.8
1927-28.....	37.2	20.4	7.38	23.7	147.7	21.4	22.5	28.5	68.6	7.10	4.15	2.20	....	32.5
1928-29.....	37.3	28.9	9.95	26.3	139.8	16.4	20.8	27.5	70.3	7.93	5.49	2.29	6.34	35.1
1929-30.....	36.1	19.8	7.71	26.3	157.6	17.2	20.2	31.2	66.6	6.69	4.78	2.45	9.20	33.1
1930-31.....	41.5	21.9	9.25	25.7	146.5	16.2	22.1	28.0	68.2	6.14	5.61	2.46	8.04	33.8
1931-32.....	38.0	27.7	9.29	23.8	145.1	15.8	25.1	24.7	66.0	5.63	4.35	2.18	8.20	34.9
1932-33.....	40.1	23.2	9.44	29.7	184.2	24.8	23.1	25.5	65.7	5.94	5.32	2.08	9.47	36.8
1933-34.....	37.7	24.1	9.25	30.4	138.1	17.0	22.4	25.1	73.1	7.02	6.72	2.45	8.15	38.9
Average 1928-33.....	38.6	24.3	9.13	26.4	154.6	18.1	22.3	27.4	67.4	6.47	5.11	2.29	8.25	34.7

* Computed from production and trade data given in Tables II and XXII. Dots (...) indicate that comparable production and trade figures are not available. Figures for several other countries are given in Table XXV.

^a Including Luxembourg.

^c Includes trade figures for eleven months only.

^b Probably too low on account of understatement of crops, and also in 1924-25 of net imports.

TABLE XXXI.—WORLD WHEAT SUPPLIES AND APPROXIMATE DISAPPEARANCE, ANNUALLY FROM 1924-25*

(Million bushels)

August- July	World ex-Russia					Four chief exporters				Europe ex-Danube ex-Russia				
	Initial stocks	Crops	Russian exports	Total supplies	Disap- pearance	Initial stocks	Crops	Net exports	Domestic disap- pearance	Initial stocks	Crops	Net imports	Total supplies	Disap- pearance
1924-25...	685	3,055	... ^a	3,740	3,212	291	1,458	700	816	214	853	630	1,697	1,532
1925-26...	528	3,302	27	3,857	3,246	233	1,370	604	762	165	1,100	522	1,787	1,581
1926-27...	611	3,364	49	4,024	3,377	237	1,632	741	852	206	922	679	1,807	1,605
1927-28...	647	3,580	2	4,229	3,525	276	1,755	768	917	202	1,002	656	1,860	1,647
1928-29...	704	3,904	... ^a	4,608	3,637	346	1,989	891	901	213	1,042	667	1,922	1,681
1929-30...	971	3,424	9	4,404	3,482	543	1,417	544	866	241	1,146	505	1,892	1,675
1930-31...	922	3,705	114	4,741	3,734	550	1,757	651	1,036	217	1,006	610	1,833	1,649
1931-32...	1,007	3,669	65	4,741	3,743	620	1,664	618	1,013	184	1,064	606	1,854	1,670
1932-33...	998	3,699	17	4,714	3,617	653	1,642	579	973	184	1,268	441	1,893	1,659
1933-34...	1,097	3,599	34	4,730	3,589	743	1,258	456	849	234	1,378	386	1,998	1,697
1934-35...	1,141	....	...	....	....	696	....	...	...	301	....	...	....	....

* Summarized from Tables I, XII, and XXI.

^a Net imports.

TABLE XXXII.—ANNUAL AND MONTHLY AVERAGE PRICES OF WHEAT IN FOUR CHIEF
EXPORTING COUNTRIES*
(U.S. cents per bushel)

Year and month	United States (July-June) ^a								Winnipeg ^b and others (August-July)				
	Farm price	All classes	Basic cash (Chic.)	No. 2 H. W. (K. C.)	No. 2 R. W. (St. L.)	No. 1 N. S. (Mnpls.)	No. 2 A. D. (Mnpls.)	No. 1 White (Seattle)	Wtd. average	No. 1 Man.	No. 3 Man.	Buenos Aires 78-kilo ^c	Melbourne f.a.q. ^d
Average													
1909-14	89	...	96	95	103	100	...	...	...	95	...	97	92
1924-25	140	155	154	151	172	157	169	...	152	168	159	157	146
1925-26	146	156	159	162	171	161	148	...	139	151	142	146	148
1926-27	123	139	138	136	137	147	157	...	130	146	135	133	137
1927-28	122	135	137	138	159	140	134	...	119	146	130	130	133
1928-29	99	111	116	111	136	120	116	...	103	124	115	108	114
1929-30	101	116	117	113	126	124	114	114	126	124	118	108	115
1930-31	62	75	82	73	82	80	75	69	66	64	58	56	53
1931-32	41	58	55	50	49	70	75	60	50	53	46	44	43
1932-33	39	56	54	51	57	58	58	55	47	48	45	43	43
1932-33	38	53	52	49	54	55	55	51	43	44	41	40	40
1933-34	72	90	88	86	90	92	104	75	66	68	63	53	51
1933-34	46	57	56	55	58	59	67	48	41	42	39	34	33
CURRENT U.S. CENTS													
July	87	100	100	98	101	108	108	83	78	79	74	60	62
Aug.	75	92	90	90	92	94	102	76	69	69	65	56	57
Sept.	71	89	86	87	89	90	100	72	64	65	61	56	55
Oct.	64	84	82	83	86	85	97	70	57	59	54	50	47
Nov.	71	87	86	84	90	86	100	75	61	65	59	55	52
Dec.	67	83	83	80	87	83	97	73	58	61	55	48	51
Jan.	69	88	88	84	91	88	111	76	62	65	59	52	49
Feb.	72	91	89	85	91	90	109	75	63	65	61	52	47
Mar.	71	88	87	82	89	88	110	76	64	66	62	53	48
Apr.	69	83	82	78	83	83	97	72	63	66	61	54	50
May	70	94	89	86	87	94	109	77	68	71	66	53	50
June	79	95	95	89	91	109	112	80	76	78	71	53	53
July	79	95	96	93	92	110	124	80	81	83	77	57	57
U.S. PRE-DEVALUATION GOLD CENTS													
July	61	72	72	70	73	78	78	59	56	57	53	43	44
Aug.	56	67	65	66	67	69	75	56	50	50	48	41	42
Sept.	48	60	58	59	60	61	68	48	43	44	41	38	37
Oct.	44	57	55	56	58	57	65	47	38	40	37	34	31
Nov.	42	54	54	52	56	54	62	47	38	41	37	34	33
Dec.	43	53	53	51	56	53	62	46	37	39	35	31	32
Jan.	43	55	55	53	57	55	70	47	39	41	37	33	31
Feb.	43	55	53	51	55	54	65	45	37	39	36	32	28
Mar.	42	52	52	49	53	52	65	45	38	39	37	32	28
Apr.	41	49	48	46	49	49	58	43	37	39	36	32	29
May	42	56	53	51	52	56	65	46	41	42	39	32	30
June	47	57	57	53	54	65	67	47	45	46	42	32	32
July	47	56	57	55	55	65	74	48	48	49	46	34	34

* 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. Annual figures in italics represent approximate gold cents per bushel. All gold prices are based on the price of gold in London.

^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 Northern Spring and No. 2 Amber Durum at Minneapolis, and No. 1 Western White at Seattle. See especially *Agriculture Yearbook*, 1934, pp. 401-02, and *Crops and Markets and Foreign Crops and Markets*. Monthly prices of the foregoing series (except farm prices and No. 1 White at Seattle) are weighted by carlot sales. Prices of basic cash wheat (Chicago) are simple averages of weekly average prices of the cheapest wheat deliverable on Chicago contracts (basic data from Chicago *Daily Trade Bulletin*).

^b Based on data from *Canadian Grain Statistics*, *Grain Trade of Canada*, *Monthly Review of the Wheat Situation* (Dominion Bureau of Statistics), and for pre-war years,

Agriculture Yearbook (U.S.), 1923, p. 628. Monthly average prices of No. 1 Manitoba are as reported by the Dominion Bureau of Statistics; Winnipeg weighted averages are simple averages of weekly average prices weighted by inspections; prices of No. 3 Manitoba are simple averages of unweighted weekly average prices.

^c Recent monthly prices are simple averages of daily quotations from *Revista Semanal*; pre-war data from *Estadística Agro-Pecaria*. For 1923-24, prices computed by deducting 6 cents per bushel from Friday prices of Barletta wheat reported in the *Times of Argentina*. From March 16 to December 11, 1932, prices are for 80-kilo wheat.

^d Recent monthly prices are simple averages of daily quotations from *Wheat and Grain Review*, Melbourne, of "Wheat, Trucks, Williamstown." Pre-war data furnished by John Darling and Son, Melbourne.

TABLE XXXIII.—ANNUAL AND MONTHLY AVERAGE PRICES OF IMPORT AND DOMESTIC WHEAT IN EUROPE*
(U.S. cents per bushel)

Year (August-July) and month	United Kingdom import wheats					Domestic wheats							
	All im- ports ^a	British parcels ^b	No. 3 Mani- toba ^c	Argen- tine Rosafé ^c	Aus- tralian f. a. q. ^c	Great Brit- ain ^d	France (Paris) ^e	Ger- many (Berlin) ^f	Italy (Milan) ^g	Hun- gary (Buda- pest) ^h	Yugo- slavia (Novi- Sad) ⁱ	Ru- mania (Bra- ila) ^j	Bul- garia (Bour- gas) ^k
Average 1909-14	108	...	...	...	...	99	142	135	150 ^j	...	...	...	...
1924-25	180	182	181	181	181	160	173	156	185	182	...	...	...
1925-26	170	170	168	163 ^k	176	158	145	161 ^k	208	149	...	...	...
1926-27	164	163	164	160	167	149	186	177 ^k	208	152	...	...	...
1927-28	155	152	154	151	160	129	173	162	191	152	...	...	...
1928-29	132	129	138	128	140	127	167	142	187	118	...	...	...
1929-30	130	127	137	122	133	112	147	165	187	109	...	92	...
1930-31	79	76	77	72	78	81	184	168	156	72	79 ^k	57	63
1931-32	57	59	62	56	61	61	172	152	149	58	77	50	51
1932-33	56	56	58	53	58	56	124	135	151	69	77	95 ^k	56 ^k
1932-33	52	52	54	49	54	52	116	126	143	65	71	88 ^k	52 ^k
1933-34	68	69	77	61	71	64	212	191	189	75 ^k	64	98 ^k	...
1933-34	43	43	48	38	45	40	133	119	118	47 ^k	40	62 ^k	49 ^k
CURRENT U.S. CENTS													
Aug.	73	69	75	64	74	67	174	155	166	60	58	81	...
Sept.	72	72	75	63	72	60	189	172	175	58	60	91	...
Oct.	66	57	67	56	65	60	192	176	170	55	56	89	...
Nov.	70	68	74	63	73	63	208	190	180	59	62	92	...
Dec.	69	68	72	60	70	61	205	187	188	56	58	98 ^k	...
Jan.	65	68	77	60	70	59	210	190	200 ^k	59	58	n. q.	...
Feb.	68	68	76	57	66	60	222	198	199	69	65	n. q.	...
Mar.	67	72	76	57	65	60	228	204	201	80	65	101 ^k	...
Apr.	68	72	74	59	69	61	232	206	205	81	65	100 ^k	...
May.	68	65	75	60	72	66	235	207	197	91	74	121	...
June	69	70	83	64	75	74	237	203	193	106	76	109	...
July	67	78	90	68	78	72	216	204	191	128 ^k	74	n. q.	...
U.S. PRE-DEVALUATION GOLD CENTS													
Aug.	53	50	55	47	55	49	127	113	120	44	42	59	45
Sept.	48	49	51	43	49	41	127	116	118	39	40	62	45
Oct.	44	38	45	38	43	41	129	118	116	37	38	56	45
Nov.	44	43	46	39	46	40	130	119	113	37	39	58	46
Dec.	44	44	46	38	45	39	131	119	120	36	37	63 ^k	45
Jan.	41	43	48	38	44	37	133	120	126 ^k	37	36	n. q.	48 ^k
Feb.	41	41	46	34	40	36	133	119	120	41	39	n. q.	53
Mar.	40	43	45	34	39	36	136	121	119	47	39	60 ^k	53
Apr.	40	43	44	35	41	36	138	122	122	48	39	60 ^k	53
May.	41	39	45	36	43	39	140	123	117	54	44	72	53
June	41	41	49	38	45	44	141	121	114	63	45	65	53
July	40	46	53	40	46	43	129	122	114	76 ^k	44	n. q.	53

* Annual prices are arithmetic averages of monthly prices. Conversions to current U.S. cents made at par when ex-
changes were near par, otherwise at current exchange rates. Annual figures in italics represent approximate pre-devalua-
tion gold cents per bushel: these, and monthly gold prices, are based upon the price of gold in London. For Bulgaria,
1933-34 prices are converted to gold at pre-devaluation par of exchange, because of unsatisfactory character of Bulgarian
exchange quotations.

^a Data from *Accounts and Papers Relating to Trade and Navigation of the United Kingdom*: declared values of all imported wheat divided by quantities imported.

^b Data from *London Grain, Seed and Oil Reporter*: aver-
ages of all sales of wheat parcels on British markets.

^c Data from *Corn Trade News*: averages of Tuesday quo-
tations of parcels afloat or for early shipment, mainly to
Liverpool. Australian prices from 1931-32 are averages of
low quotations.

^d Averages of weekly *Gazette* prices from the *Economist*
(London) and the *Agricultural Market Report*.

^e Averages of daily prices (*marché libre*) from *Bulletin
des Halles*. Annual prices to 1925-26 are prices at Chartres
and are probably about 5 cents lower than Paris prices.
Pre-war prices from *Annuaire international de statistique
agricole, 1915-16*, p. 705.

^f Data from *Wirtschaft und Statistik* (post-war), *Viertel-
jahrshefte zur Statistik des Deutschen Reichs* (pre-war).
Fixed prices to producers after October 1933.

^g Data from International Institute of Agriculture, *Year-
book of Agricultural Statistics and Monthly Crop Report and
Agricultural Statistics*. Prices for Italy are for "soft" wheat;
prices for Rumania are for wheat of good quality.

^h See WHEAT STUDIES, VI, 228, for prices to 1926-27; prices
1927-28 to 1929-30 are prices of Tisza (78 kilo) from
Bulletin statistique mensuel hongrois; prices from 1930-31
are for same quality wheat from *Monthly Crop Report and
Agricultural Statistics*.

ⁱ Data from U.S. Department of Agriculture. Prices for
Bulgaria are prices paid to producers.

^j Average for calendar years 1910-14.

^k Prices missing for some weeks.

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