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WORLD WHEAT PRICES, CANADIAN-ARGENTINE SPREADS, AND THE OTTAWA AGREEMENT

IN THE Empire preference agreement between the United Kingdom and Canada it was provided that Canada should offer wheat "on first sale in the United Kingdom at prices not exceeding the world prices and in quantities sufficient to supply the requirements of the United Kingdom consumers." In this stipulation was no definition of "world price" of wheat, no yardstick of requirements. During recent years protest has been raised in Great Britain that the price of wheat in Canada was being artificially held above the "world price." During the first three of the last five years, the price of Argentine wheat did not stand continuously or significantly below the price of Canadian wheat; but during the last two years the price of Canadian wheat has stood continuously and significantly above the price of Argentine wheat. Since the price of wheat in Winnipeg during these two years has been directly or indirectly pegged, it is open to question whether wheat sold in the United Kingdom on the basis of the Winnipeg price could be regarded as supplied at the "world price."

For several years it has been the policy of the Conservative Government of Canada under Premier Bennett to support the price of wheat. In an election held on October 14, the Liberal party, under the leadership of Mackenzie King, obtained control of the new Parliament with an outstanding majority. It is to be inferred that the policy in respect of encouragement of agriculture will not differ from that of the Conservative party. But quite certainly the people of the United Kingdom will be surprised if the Liberal party maintains in Winnipeg an artificial wheat price which enforces in England a price of Canadian wheat significantly higher than the current prices of other available imported wheats.

STANFORD UNIVERSITY, CALIFORNIA

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WORLD WHEAT PRICES, CANADIAN-ARGENTINE SPREADS, AND THE OTTAWA AGREEMENT

INTRODUCTION

The British Commonwealth of Nations is now in some respects a field of cross-purposes. The historical relationship of mother country to outlying regions no longer prevails. Since the World War the Dominions have become self-conscious. The self-governing autonomy granted to Canada, Australia, and New Zealand is inevitably extending to South Africa, Egypt, and India. Trade relationships had been historically influenced by the political relationship: up to the close of the last century, the commercial relations were like those within a family. The World War, which directly coalesced the separate parts of the Empire, also brought about secondary changes which tend to diverge them. With the establishment of the British Commonwealth of Nations, it was but natural that each major unit should feel an augmented impulse toward self-sufficiency.

The policy expressed in so-called Empire preference was a recognition of these changes. By conserving free trade and other preferential relations within the Empire, it was sought to reproduce within the British Commonwealth of Nations something resembling the relations between the forty-eight states of the United States. Great Britain sought to draw more of her required imports from within the Empire; naturally, she expected to pay for these imports with the products of British industry. The "Buy British" and "Buy Empire" movements were thus crude and sentimental expressions of a deep motive. At the same time it was clear, because of the small populations of Canada, Australia, New Zealand,

land, Egypt, and South Africa, and the backward standards of living of populous India, that British industry needed large outlets outside of the Empire. Necessarily, therefore, the import policy of Great Britain had to bear some relation to the need of such export outlets. This was all the more true since British capital had developed important foreign

countries like Argentina just as much as it had promoted dominions like Canada and Australia. Also, the large trade with continental Europe could not be disregarded.

The outlying units of the British Commonwealth of Nations sought to expand their exports to Great Britain and expected to be paid with products of British industry. But since these countries turn out raw materials far more

than Great Britain requires, they also need outlets in foreign lands, and especially in the countries of western Europe. These foreign countries, which import the raw materials of Canada, Australia, New Zealand, and South Africa, naturally expected to pay for them with goods. Obviously, therefore, the goods from the foreign countries, especially continental European, compete with British goods in Canada, Australia, New Zealand, and South Africa. Conversely, the cereals, meat, and wool of these four countries compete in the markets of Great Britain with the corresponding products of Argentina and other countries. Great Britain is thus a competitive market for the raw materials of the world; and the outlying parts of the Empire are competitive markets for the manufactures of the world.

At an Imperial Economic Conference held in Ottawa in the summer of 1932 a program

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of Empire preference was adopted. In view of traditional political relations, long-standing financial connections, and future offensive and defensive needs, it was sought to accord several preferential rights to the members of the Empire. One of these was a preference on Empire wheat. This was accorded duty-free entry into the United Kingdom, and a duty of 2s. per quarter was imposed on wheats of countries lying outside the Empire. At the same time, Great Britain sought to protect her bread supply from untoward or artificially high wheat prices by the explicit stipulation that under the system of Empire preference Great Britain was still to receive her wheat at "world price." This reservation was incorporated into the United Kingdom-Canadian Agreement (Article 4) as quoted below, and inferentially it would apply to Australia as well.

It is agreed that the duty on either wheat in grain, copper, zinc or lead, as provided in this agreement, may be removed if at any time Empire producers of wheat in grain, copper, zinc and lead respectively are unable or unwilling to offer these commodities on first sale in the United Kingdom at prices not exceeding the world prices and in quantities sufficient to supply the requirements of the United Kingdom consumers.¹

In WHEAT STUDIES for October 1933 we undertook an early appraisal of "British Preference for Empire Wheat." In that study we ventured to make the forecast that the duty of 2s. per quarter would not restrict the importation of ex-Empire wheat to any significant extent, especially from Argentina. At that time we did not appraise the agricultural and marketing capacity of the Dominions to supply wheat to the United Kingdom "in quantities sufficient to supply the requirements of the United Kingdom consumers." Nor did we venture to forecast the qualifications of the Dominions to supply wheat to the United

Kingdom "at prices not exceeding the world prices."

These two stipulations have become practical issues. On the part of Canada and Australia, it can be asked whether the imports of the wheats of these dominions into the United Kingdom during the past three years have been large enough to fulfil the expectations of these dominions as to their anticipated participation in the total import requirements of the United Kingdom. On the part of the United Kingdom, the specific question has been raised whether the prices of Canadian and Australian wheat in the United Kingdom have been such as to fulfil the expectation that these wheats would be provided to the United Kingdom "at prices not exceeding the world prices."

It is to the second of these questions that the present study is directed. As a political question in Great Britain the issue has been raised by the striking circumstance that while the wheats of Australia, quality considered, have been offered to the United Kingdom (on first sale by traders) at prices reasonably comparable with the wheats of Argentina, the wheats of Canada have been offered to the United Kingdom (on first sale by traders) at prices substantially higher than what appeared at first glance to be "world prices." The distinction thus made manifest calls for explanation. Protests have recently been raised in official quarters that at current prices of Canadian wheats these are not being furnished at the "world price." If Canadian wheats have not been delivered at "world prices," wherein lies the difference? What would result if the preference were withdrawn?

If one asks a wheat grower, a grain trader, or a miller in Canada, "What is the cash price of Canadian wheat?" he will be told that the "price of Canadian wheat" varies according to grade. The futures markets use specified grades, with appropriate premiums or discounts. Making delivery on a futures contract at Winnipeg implies offering No. 1 Manitoba Northern, with a premium on No. 1 Manitoba Hard and progressive discounts on the lower grades. The prices of the deliverable wheats are sometimes wide apart, and a further gap

¹ Imperial Economic Conference at Ottawa, 1932, *Summary of Proceedings and Copies of Trade Agreements* (Cmd. 4174), London, 1932, p. 19. There is no public record of *pro forma* agreement between the negotiating parties concerning the precise meaning of "prices not exceeding the world prices" or of "quantities sufficient to supply the requirements of the United Kingdom consumers."

appears between deliverable and non-deliverable grades. If it is asked in Chicago, "What is the price of wheat?" one answer is to give the price of futures. Another answer is to give the spot prices of spring wheat, soft red winter, or hard red or yellow winter wheat which would be directly tenderable on a futures contract. At Chicago the seller making delivery on a futures contract may tender the cheapest of No. 1 Northern Spring, No. 2 Soft Red Winter, or No. 2 Hard Red or Yellow Winter wheat; or he may offer other grades with appropriate premiums and discounts. Another answer might be to give the prices of wheats over the entire range which, with premiums and discounts, are acceptable in making payment on futures contracts. In short, on the American and Canadian wheat markets the price of wheat is not a point or a line but a wide range; the price of the wheat future is the basis of adjustment; the system of marketing in cash and futures is based upon the inevitability of a range.

Other countries have more primitive conditions in their wheat markets. Only a few decades ago, all imported wheats were sold in Europe f.a.q. or on sample. And even today there are in fact no statutory grades in Australia, India, Argentina, and Russia. From early days, the wheats of Argentina and Australia have been marketed on the basis of "fair average quality," determined year after year mainly in England, though (in the case of Australia for many years) sometimes in the country of origin, with supposedly appropriate discounts and premiums. The f.a.q. standard is of course wider than any one upper grade of Canadian wheat, since it is largely based on weight per measured bushel. To some extent, wheats from these countries are sold on sample. The wheats of India, Russia, and the Danube have been sold mostly on sample in the importing markets of Europe; the Danubian wheats, deteriorated during the war, are still below pre-war hardness and quality, and this is true also of Russian wheats. Under these circumstances, it is only possible to say that the world price of Argentine and Australian wheat is based on some average price of the fair average quality for that year in the principal market, Liver-

pool; but even this limited definition does not apply to the wheats of India and Russia. If the wheats of Argentina, Australia, India, and Russia, like those of Canada, were classified into statutory grades under inspection, the wheat markets of the importing countries of Europe would look very different from what they do today.

Therefore, the factual "world price" of wheat is a range within which different wheats find higher or lower places in different years. It is not practicable to work backward from such a range in the United Kingdom and subtract a series of stipulated items of expenses of movement to reach a series of prices in the several countries of origin. As explained below, one cannot thus subtract from c.i.f. prices in the United Kingdom to arrive at prices in Winnipeg, Chicago, Buenos Aires, Karachi, or Sydney. Nor can one take interior prices in the exporting countries, or at their ports, and add expenses to arrive at c.i.f. prices in the United Kingdom. There is entirely too much shifting, expansion, contraction, and adjustment in the total spread between interior collecting points in the wheat-exporting countries and ports in the wheat-importing countries to allow of arbitrary allowances for costs of movement. Both for parcels and cargoes, the numerous items in the expense account of wheat movement are surprisingly variable.

Obviously, under such circumstances there will need to be stipulation of definition in a workable agreement. In the case of delivery of Dominion wheat to the United Kingdom, under a scheme of preference, there is need of some stipulation of price—a formula by which, from season to season, such a price shall be determined. The Dominions desire to secure the highest price consistent with the spirit of Empire preference; the United Kingdom desires the lowest price consistent with the spirit of Empire preference. We may expect that when the Agreements are renewed the bare mention of the "world price" will not again be employed. A definition will need to be found which year after year is confirmable and reproducible, even though it represents a compromise between dominion and mother country.

WORLD WHEAT PRICE IN RETROSPECT

The traditional assumption, or acceptance, of a "world price" of wheat is one based largely on distance and movement. Western Europe imports annually the largest part of the international wheat movement—until recently, as a rule, well over 500 million bushels a year. Whether construed merely as quantity or on the basis of price, the ex-European demand for wheat is quite secondary. If there be a "world price" of wheat, western Europe must be the datum point.

Within Europe, the datum point has usually been placed in England, for two reasons: (a) British imports have been the largest single block of wheat imported into Europe; and (b) diversions to continental Europe of cargoes consigned to Great Britain and vice versa were easily made and occurred with frequency. In fact, much wheat was shipped on open consignment—"on orders"—the destination to be declared en route. Also, the position of London as the outstanding international clearinghouse of foreign bills of exchange greatly facilitated the localization in Great Britain of the datum point of the "world wheat price," and this contributed particularly to the liquidity of the wheat market of Europe. Since wheat is relatively nonperishable, cargo or parcel shipments could occur in vessels of all kinds—sailing ships, tramps, freighters, and passenger liners.

Each summer western Europe harvested wheat and needed, as supplement in succeeding months, to import from Russia and overseas many million bushels of wheat. Import requirements varied from year to year. The seasonal flow of wheat imports also varied somewhat from year to year, depending on the size and quality of the European crop, the size and quality of crops in the Northern Hemisphere and the size and quality of crops in the Southern Hemisphere, and to some extent on prices. Under these circumstances, arose the familiar concept of the "world price of wheat": it was the price of wheat in western Europe, and especially on the Liverpool Corn Exchange, reflected back to the exporting countries. Varying distances of shipment and differing ocean freight rates and associ-

ated transport charges were applied directly, to bring about various and varying f.o.b. and c.i.f. wheat prices. Such a "world price" had not inherently a characteristic seasonal movement, because crops in the Northern and Southern Hemispheres vary so widely.

The ocean freight rates and the associated charges of insurance and outturn, interest, loading and unloading were not closely dependent upon distance. Reduced to the mile basis, these expenses of moving wheat were lower from some ports than from others. Also, for a particular port they varied from year to year; and within a year, they varied for a particular port from month to month, of which the summer and winter charges from Montreal are a striking illustration. For the movement of wheat as a whole, the costs depended only in part upon the general level of ocean freight rates, particularly since the disappearance of the large fleets of sailing vessels which used to carry wheat in large amounts.¹

But under normal and foreseeable circumstances, the ocean freight rates and the differences by the different routes were computable in advance, within a narrow range. It was thus assumed, as a working rule, that the Liverpool price of wheat, minus the inclusive charges to Liverpool from a particular exporting country, would give the price of wheat at the port of loading in that country. That is, a fairly simple relation held between f.o.b. and c.i.f. prices. This was certainly true in the 'eighties and 'nineties, perhaps to a less extent in the decade just prior to the World War. Since the war no such rule obtains, or at least such glaring exceptions occur as to make the simple relationship of wheat price in western Europe to wheat price in the ports of the major exporting countries no longer predictable as the expression merely of distance and transport charges. So long as Liverpool prices and transfer cost were the two major variables, there was a "world price" of wheat in the wheat markets of the wheat-exporting countries. The devaluations of gold, the depreciation of currencies, and the exchange controls have of course introduced

¹ This still persists to some extent for Australian wheat.

further confusion. The effect of depreciation of European currencies on domestic prices to wheat growers in Argentina and Australia is not now measurable by the sterling prices of those wheats in the United Kingdom.

But other changes outside of monetary influences have contributed also to the decline of the rough rule of proportionality stated above. In the 'eighties and 'nineties wheat, broadly considered, was a unity, judged as a commodity. The differences between the wheats (of comparable weights) of the different surplus-producing countries did not find reflection in wide price variations in Europe. The milling and bread-making practices in Europe were simple. Most of the imported wheats coming into Europe were of the winter-habit type and tended to resemble the native European wheats; hard spring wheat came to Europe only from Russia and the United States; Marquis wheat had not been discovered; and the peculiar qualities of the gluten of high-protein hard spring wheats were not then appreciated in Europe. In short, for practical purposes, wheat was wheat, pound for pound. Under these circumstances, the price of wheat in Liverpool, minus the inclusive transfer charges, represented a figure close to the price of wheat in the port of the exporting country. The wheat importer of Europe, conversant with the rate position of ocean transport and other transfer charges and the price of wheat in Liverpool, could purchase wheat in India, Australia, or the United States and ship it to Europe, even unhedged, with a reasonable prospect of a profit and without serious untoward risk. The development of hedging was the expression of the stability of these relations. Under these circumstances arose the concept of the "world price" of wheat.

These simple circumstances no longer exist; but the expression continues to be used, under assumptions and with implications which no longer hold. The most glaring illustration of the recent changes is to be found in the recent experience that the futures price of wheat in Winnipeg has stood above the futures price of wheat in Liverpool, adjusted for grade. Despite this discrepancy and disregarding transfer costs (say 10 cents a bush-

el), the United Kingdom has purchased from Canada many million bushels of wheat. At the same time, with the price of wheat in Buenos Aires standing far below that of Canadian wheat with regard for transfer costs, the United Kingdom has purchased from Argentina many million bushels. In the wheat trade between Argentina and the United Kingdom there remains still the semblance of conformity with the transitional concept of the "world price" of wheat; in the trade between Canada and the United Kingdom, however, the semblance to this traditional concept has faded. Forty years ago, Canadian wheat could not have held the market in Great Britain despite high price, as she has recently done.

This important change in the wheat trade is the expression of a number of influences. But the principal factor is the circumstance that wheat is not today a unity in the sense of forty years ago. Wheat is not *a* cereal, *a* commodity; wheat is nowadays a *group* of cereals, a *group* of commodities. Wheat belongs to the group of bread grains, along with rye, spelt, and emmer; some white wheats are almost as different from some red wheats as is rye. In the case of wheat we have types, varieties, grades, and varying qualities within them. For no type or variety in the same country is the crop identical from year to year. Inspection rules can be so formulated as to offer a certain flexibility within grades, beyond which the variations in a crop find expression in diverging distributions among different grades. But even this degree of precision in variations is made use of in only two countries, Canada and the United States. There are types, varieties, grades, and qualities of wheat at present, in senses that did not exist forty years ago. The marketing practices are quite different. For the United States and Canada wheats are now graded on inspection, while the wheats of Australia and Argentina are still based on fair average quality. The group of wheats within a variety now range over a wide spread from premium grades to discount grades. There are premiums and discounts between types and varieties. There are premium and discount wheats within types and varieties, based on particular quali-

ties. In the nineteenth century, the British mills were not confronted with such contrasts as now hold between wheats from Canada and from India; nor were the millers at that time confronted with such differences as exist between No. 1 Manitoba Northern and No. 6 in Canada.

What the actual differences in milling values of different wheats in particular cases are depends on the use to be made of the wheat. It is often said in England that representative No. 1 Manitoba Northern is worth 10-15 cents a bushel more than fair average quality wheat from Argentina or Australia. But that depends on the blend in milling, or whether the wheats are to be employed as strengthener, backbone, or filler.¹ On both sides the spreads have widened; there are much wider spreads in wheat qualities on the producers' side; there are much wider spreads in millers' choices and requirements on the consumers' side. When nowadays any wheat is unusually abundant or scarce, this tends to bring about a surprisingly wide price deviation. When feedstuffs are bought on the calorie basis, the prices of some different feed cereals are closer together than are the prices of some different wheats on a common market. Forty years ago wheat as a commodity was close to unity, with a narrow degree of differences in composition and use, finding expression in a small spread of prices, a narrow range of premium or discount. Today wheat is a group of flour-making cereals, exhibiting large degrees of difference in composition and use, with a wide spread of prices, a wide difference between top premium and bottom discount.

There are of course other contributory influences which have widened the spread of the prices of wheats in Great Britain, and still more in other European countries. Probably the ocean freight rates from the different exporting countries were more uniform before the war than during the past decade. Certainly the foreign exchange rates have fluctuated extraordinarily during the past decade,

¹ For definition of these terms, see "British Preference for Empire Wheat," *WHEAT STUDIES*, October 1933, X, 12-13.

² In addition to a premium grade of No. 1 Hard.

as the expression of depreciation of currencies within countries, the abandonment of the gold standard, and the varying under- and over-valuation of currencies abroad. Quite certainly, the risks are greater. In our view, however, so long as we limit the examination to wheat prices in Great Britain, the wide spreads of recent years have been due mostly to the circumstance that wheat is now in effect a group of bread grains and not a unity.

RANGE OF WHEAT PRICES ON CANADIAN AND BRITISH MARKETS

The spread, or range, of wheat prices on the English market is of course a commonplace to traders and millers, but the extent is not generally appreciated. In a recent issue of *WHEAT STUDIES* (April 1935), the spreads of British parcels prices were examined over a period of ten years (1925-34). The weekly average spreads ranged from under 2s. to over 14s. per quarter; the variations were both wide and irregular, but were due mostly to changes in relative position of the cheapest wheats. At par of exchange a spread of 10s. per quarter corresponds to about 30 cents a bushel. Canadian wheat stood uniformly high in the record; indeed, No. 1 Manitoba occupied the high position in 478 weeks out of 521. Such a picture of wheat spreads over a decade gives a very definite impression, when interpreted in terms of a world wheat price. As a matter of fact, if a longer list of import wheats had been present on the London market, the spread would have been still wider. This is easily realized when one recalls the wide range of domestic wheat prices in most countries.

In Winnipeg there are regular cash quotations on six grades of bread (spring) wheat,² and now also on two grades of Garnet wheat. The spread between top and bottom is often wide, 30 cents or more, sometimes considerably less. Naturally, when these wheats go to the London market, the Winnipeg spread tends to be reflected in the London spread, but not proportionally. The real spread lies between No. 1 and No. 4 both in Winnipeg and in London. There is usually 3 cents between No. 1 and No. 2, 5 cents between No. 2 and No. 3, and 5 cents (or more) between No. 3

and No. 4. In London the buyer observes also a further spread between the Manitoba grade futures quotation, which corresponds to No. 3 Manitoba Northern, and the London milling grade futures quotation, which corresponds usually to Argentine f.a.q. or other foreign wheat not minutely graded. It is the width of these spreads, sometimes the changes within the spreads but more often the high position of Canadian wheat, which provokes in the mind of the British buyer the question concerning the world price of wheat.

In appraising the implications of the spreads between the six regular grades of wheat at Winnipeg, we must bear in mind that the six legal grades are not pro rata gradations in quality. No. 2 is not five-sixths as good as No. 1 from the standpoint of milling quality, No. 3 is not five-sixths as good as No. 2; the difference may be more or less, from season to season. Sometimes No. 2 is almost as good as No. 1; and even No. 3 may show surprisingly little inferiority under No. 1. The proportions of Garnet, weed seeds, frosted kernels, shrunken kernels, rusted kernels, and tough kernels are not progressively raised as the grade is lowered; therefore the milling value of No. 3 or No. 4, as distinguished from Nos. 1 and 2, varies from crop to crop and varies also with the uses to which the wheat is to be put in importing countries.

The proportions of the crop in the six principal Canadian grades vary widely from year to year: in some years, Nos. 1 and 2 comprise three-fourths of the crop; in other years, less than one-fourth.¹ These variations in proportions of the crop in the six grades find reflections in price. In short, the varying proportions of the crop in each of the six grades, the varying qualities in each of the six grades, and to some extent the wheat price level determine the width of the spreads.

When now the British trader or miller reads the wording of the Ottawa Agreement, he of course realizes that the statement is

¹ See, for example, Table IX in "The World Wheat Situation, 1933-34: A Review of the Crop Year," WHEAT STUDIES, December 1934, XI, 180.

² It ought to be kept in mind that the British accept the Canadian "certificate final," but not that of the United States; other exporting countries have no "certificate final."

not *explicit*. But what is *implicit* in the declaration? Which of the types, varieties, grades, and qualities of wheats in the world are expected to be received in the United Kingdom? And where, over the wide range of wheat prices, is the point to be set which the importing country denominates as the world price of wheat? The British could not have expected to receive No. 1 Manitoba Northern at the same average price as fair average quality wheat from Australia or Argentina. But if not No. 1 Manitoba Northern, what lower Canadian grade would be acceptable under the definition? Probably, most buyers have had No. 3 Manitoba Northern in mind. The importing country is clearly not dealing with maximum qualities but with minimum qualities. Is there not from each wheat-exporting country a representative wheat of minimum quality, from the standpoint of use in the United Kingdom? If so, ought there not to be definable price relations between such wheats? Whether the importing country considers prices in futures, in parcels or cargoes, on orders or to arrive, spot or on sample, the determining factors are related to the uses of these various wheats in British flour and bread.²

On the part of Canada, what is implied in the Agreement quoted above? As a matter of experience, the Canadian knows that at Winnipeg a discount of 13 cents or more a bushel is to be expected when No. 4 Manitoba Northern is delivered on contracts for future delivery. Even if the Canadian did not include consideration of "tough," "smutty," and "rejected" wheats, he must regard No. 4 or No. 3 as quite as fully entitled to the name "Canadian wheat" as No. 1 and No. 2. Certainly, it was not believed in Canada that the Dominion in the Agreement quoted intended to offer Great Britain No. 1 Manitoba Northern at the same price in the United Kingdom as fair average quality Australian or Argentine wheat. But was it perhaps anticipated in Canada that the wheat expected to fulfil the stipulation under so-called "world price" was No. 3 or No. 4 Manitoba Northern? Or Garnet wheat No. 2? The Canadian case would be stronger if No. 3 Manitoba Northern were the standard for Winnipeg futures contracts instead of

No. 1, with Nos. 1 and 2 definitively stipulated as premium wheats—just as is the case, for example, with No. 1 Hard Spring, No. 1 Dark Northern Spring, and Nos. 1 and 2 Dark Hard Winter at Chicago.

Beneath the attitudes of the importing British and the exporting Canadians lie the biased reflections of the buyers and the sellers. In the Agreement, the British obviously expected to receive certain minimal qualities at a low price; the Canadians expected to offer certain maximum qualities at a high price. How much more wheat would Canada have exported to the United Kingdom during the past five years if the price of No. 3 Manitoba Northern had been the same as the price of f.a.q. Argentine wheat loaded at Bahía Blanca? Would Argentine wheat then have declined in price and still held the market, or would more Canadian wheat have been taken at the lower figure? Putting it another way, has Canadian wheat been too high or Argentine wheat too low?

COMPARISON OF PARCELS PRICES OF CANADIAN AND ARGENTINE WHEATS

Some light on these price relations is to be obtained by a comparison of prices of Canadian wheats in Great Britain with those of any country whatsoever which for the time being is directly competitive in the British market. This comparison is not to be obtained directly by contrasting the prices of wheat futures in Winnipeg,¹ Liverpool, and Buenos Aires. It might, however, be approached directly through the quotations on futures in London, over a few recent years at least. The "Baltic" Grain Exchange in London offers traders the use of two sets of wheat futures which are offered under the terms "Manitoba grade" and "London grade (milling quality)." In effect "Manitoba grade" is a future for Canadian wheat, and "London grade" is a future for the predominating alternative, which in recent years has been that of Argentina.

We felt it important to compile these quotations on the Baltic Exchange over a period of five years beginning August 1, 1930, using

¹ This would hold true even if the Winnipeg prices had been uncontrolled during recent years.

the reports in the *London Grain, Seed and Oil Reporter*. But when the prices thus assembled were scrutinized, grave discrepancies appeared which have been due, according to expert advices, to the erratic course and limited volume of speculative trading. Under these circumstances, and particularly during the last two years, the futures quotations cannot be relied upon to reproduce the market facts, as ought to be the case with broad and representative trading on exchanges. We have thus been convinced that the Baltic futures quotations cannot be used for the purpose contemplated. Since we cannot compare the Winnipeg futures prices with Liverpool futures prices, we have found ourselves driven to the use of cash prices.

The question next arises as to the choice between prices of wheat parcels and of wheat cargoes. We have selected the former because of the infrequency of quotations of cargoes and the circumstance that cargoes are often quoted to arrive at distant dates. Parcels are smaller lots, but they are more frequently quoted and the quotations usually apply to the present or early future.

Our data have been taken from the daily reports in the *London Grain, Seed and Oil Reporter*, which are given in English shillings per quarter of 480 pounds. There are two sets of sellers' quotations on Canadian parcels—Atlantic and Vancouver shipments, respectively. We have compiled complete sets of the sellers' quotations for both Pacific and Atlantic origins, choosing for each series daily the *lowest* quotation when there was more than one. The sellers' quotations for Argentine wheat have covered a relatively wide range, and from these we have selected regularly the *highest* daily quotations, those of the harder winter wheats mostly loaded in Bahía Blanca. To the quotation for Argentine wheat the appropriate duty has been added after November 18, 1932.

The three series of prices thus selected were reduced to weekly averages for weeks ending with Saturday. In some instances, quotations were few in number; at other times, only one of the Canadian quotations was available for months at a time. Sometimes, for several successive weeks no averages could be computed

and the record shows blanks. The prices, as finally stated, are in *Canadian cents per bushel*, adjusted to the exact exchange (sterling-Canadian dollar) rate of the day. These weekly average prices appear in Table I.

Spreads were next computed from the weekly averages of the daily prices. These weekly spreads in Canadian cents per bushel are given in Table I for the five crop years ending July 31, 1935. Finally, a series of spreads was selected which represents the differences (in Canadian cents per bushel) between the weekly averages of the *lowest* priced No. 3 Manitoba Northern wheat (whether Vancouver or Atlantic) and the *highest* priced f.a.q. Argentine wheat, usually overweight and mostly shipped from Bahia Blanca and therefore representing in these years the best and the hardest winter wheat of Argentina. This series of spreads appears in Table II.

When one scrutinizes the weekly price quotations for No. 3 Manitoba Northern wheat from Atlantic ports and Vancouver, one must be struck with the tendency, especially in recent years, for the price of Vancouver wheat to stand below that of Atlantic wheat.

This recent development is due to change in varieties. During the 1920's, Marquis wheat predominated in the three Prairie Provinces; and since the wheat grown in the western half of Saskatchewan and in Alberta tended, other things equal, to show a higher protein content, the shipments from Vancouver often brought higher prices than shipments from Atlantic ports. The contrary experience in recent years is due to the dissemination of Garnet wheat. This wheat runs significantly lower in milling value than do Marquis, Ceres, or Reward wheats; millers in Canada or Great Britain usually reckon the difference, in the case of No. 1 and No. 2 wheats, as about 8 cents a bushel inferiority for Garnet. Since Garnet wheat has been planted especially in the western half of Saskatchewan and in Alberta, Vancouver shipments have been affected disproportionately. This for the most part accounts for the discounts on Vancouver shipments during recent years.

This inferiority of Garnet wheat now has been recognized officially in Canada (a)

through strict limits on the presence of Garnet wheat in No. 1 and No. 2 Manitoba Northern; (b) with the introduction of two special grades for all-Garnet wheat, No. 1 and No. 2; (c) with the further provision that, if a sample of otherwise No. 2 Manitoba Northern contains more than 3 per cent of Garnet, the grade is reduced thereby to No. 3 Manitoba Northern. Henceforth, it will be possible for European millers to exclude Garnet wheat from their purchases; and thereafter we expect that shipments of wheat grading Nos. 1 and 2 Manitoba from Vancouver (other things equal and especially if unfrosted) will be accorded in Great Britain prices equal to or above Atlantic shipments of wheat grading Manitoba Northern.¹

¹ Garnet wheat, introduced several years ago, rapidly acquired popularity in the northern parts of the three Prairie Provinces principally on account of its earlier maturity. The exact proportions of the several wheats in the present (1935) crop are not ascertainable, under the abnormal conditions of rust, drought, and frost. Good field judges have advised us that approximately the following percentages of the planted acreage were devoted to the specified wheats:

Marquis and mixtures.....	55
Garnet	25
Durum	10
Reward, Ceres, and Red Bobbs 222	20

Marquis has been displaced, particularly in the north, because of exposure to early frost. Probably the best wheat of all for bread flour is Reward, which is also semi-resistant to rust and has a fairly early maturity. Red Bobbs 222 and Ceres are excellent wheats in quality, with Ceres the least resistant to rust; both have an earlier maturity than Marquis. Garnet has the earliest maturity of all and is fairly rust resistant; but it stands low in milling value, on account of poor quality of gluten. In the large carryover of old wheat on August 1, 1935, Garnet is to be found in all grades, but mostly in wheats in the terminals which have been filled from the northern regions. Under the new ruling, Manitoba Northern No. 1 and No. 2 are to be practically free of Garnet; but there is no such limitation of Garnet in No. 3 and the lower grades. At present, No. 2 Garnet is selling below No. 3 Manitoba Northern of new crop, which contains a larger proportion of Garnet than the No. 3 Manitoba Northern in the carryover.

In each region it will need annually to be determined whether it is more advantageous to the grower, on grounds of price, to market the Garnet wheat in the Garnet grades or to mix the Garnet into Manitoba Northern grade 3 and lower. Also, the importing Europeans have this year the question of importing (a) No. 1, No. 2, or No. 3 old-crop Manitoba Northern, containing variable amounts of Garnet wheat, or (b) No. 1 and No. 2 new-crop Manitoba Northern practically free of Garnet wheat, or (c) No. 3 and No. 4 Manitoba Northern heavy with Garnet wheat, or (d)

We feel that the set of spreads in Table II represents conservatively the difference between the going valuations of No. 3 Manitoba Northern wheat and f.a.q. Argentine wheat. These two grades are appropriate for direct comparison because the long-standing experience in milling circles in western Europe is that for most purposes in a blend these two wheats are equivalent. We have conservatively interpreted this to the further extent of using regularly the lowest quotations for the Canadian and the highest quotations for the Argentine wheat. Certainly, under these circumstances, it is conservative to regard the Argentine wheat quoted as being fully equal in milling quality to the Canadian wheat quoted.

However, a qualification is necessary. If a mill needs wheat to strengthen a mix (for example, up to 25-30 per cent of the total), then f.a.q. Argentine wheat may not be as good as No. 3 Manitoba Northern. This depends upon the type of bread to be made from the flour.

For the type of bread made in the United States the gluten of Marquis wheat is definitely superior to the gluten of the Lin Calel and Kanred wheats which predominate in the Argentine samples of hard winter wheat. It would be to no purpose to enter into a discussion as to whether top-notch hard spring wheat from North Dakota or Montana is superior in American flour to top-notch hard winter wheat from the panhandle of Texas or western Oklahoma. If the bread of a country has to be very light and the dough must absorb a large amount of water, if the gluten in the dough of that bread has to be subjected to rapid fermentation and heavy kneading, then according to general experience the protein of hard spring wheat is somewhat superior to the protein of hard winter wheat. Certainly this reasoning would tend to hold in the United States; if a miller needs a mini-

No. 1 and No. 2 Garnet grades consisting predominantly of Garnet wheat. These four will need to be evaluated on the basis of quality, in the light of differential prices. Without question, this indecision is one reason why the early imports from Canada in the present season are low, despite low port stocks of imported wheat in Europe. This has proved an unfortunate year in which to change wheat grades.

mum quantity of high-protein, strong-gluten wheat for strengthening flour, he would usually prefer hard spring wheat to hard winter wheat.

But this does not hold in the same way in Europe. The standard bread of Europe is quite different from the bread of the United States; it has a slower fermentation and yields fewer loaves to the barrel of flour. In the United Kingdom, which alone is concerned in the present study, the type of bread varies. In Scotland a very strong flour is needed to make the type of bread esteemed in that country. In southern England a much softer flour will do, because the bread is quite like that of the countries across the Channel. The gist of this may be stated as follows: for the first 25 per cent of an average British mill mix, the hard spring wheat of Canada is superior to the hard winter wheat of Argentina; but for the backbone of the mix, which may be 40-50 per cent of the total, the better grades of Argentine wheat will be as satisfactory as No. 3 Manitoba Northern. In the average British mix, even soft Australian wheat is regarded as desirable for reasons of color and bloom.

It is of course to be kept in mind that the milling quality of No. 3 wheat in different years is not the same. The amount and kinds of foreign material and weed seeds; the proportion of kernels which are shrunken, frosted, rusty, sprouted, or tough; the test weight of the wheat; and the level of protein content of the year—all of these have varying bearings on the milling value of the No. 3 wheat from year to year. In better years, No. 3 wheat graded down from No. 2 for a particular reason might find an acceptable place in a mill mix in Great Britain; in another year, the mill would not consider a No. 3 wheat graded down for a different reason. Whether a No. 3 wheat is acceptable in part replacement of No. 2 or No. 1 will depend upon prices, type of flour being ground, characteristics of the other wheats in the mix, and the difficulties and characteristics of the particular No. 3 wheat. It is as much a question of British milling standards as of Canadian grain standards. Judged in this way, one would expect to find No. 3 wheat standing higher or lower

in different years in Great Britain, depending upon qualitative circumstances; and this is the experience. On the other side, variations are found in even the overweight hard wheats loaded at Bahía Blanca.

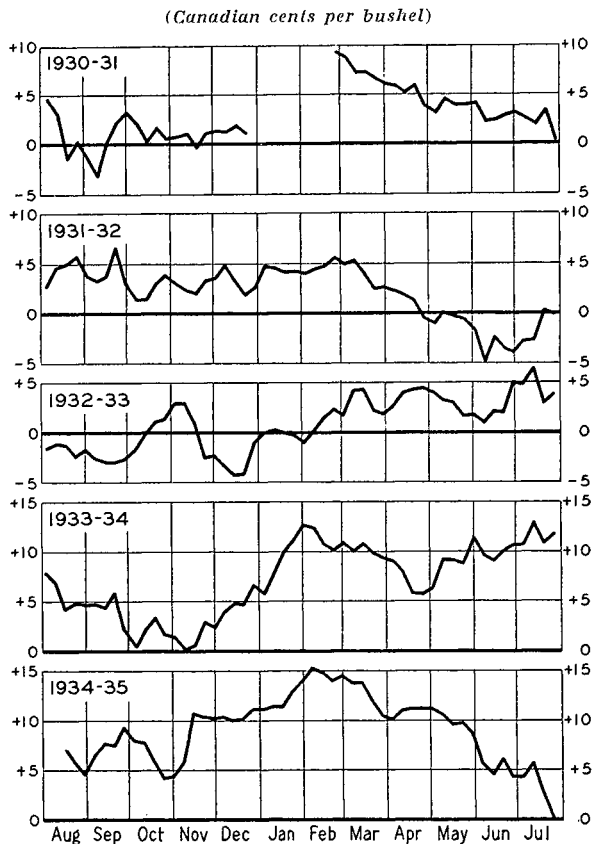
With these qualifications, we believe it is conservative to base our price comparisons on the technical assumption that over the field in which Canadian and Argentine wheats compete directly in the United Kingdom (let us say after the first 25 per cent, which is the strengthener of the mix) the better-grade Argentine hard winter wheat is fully equivalent to No. 3 Manitoba Northern wheat. This assumption is made the more appropriate because we take the highest quotations for the Argentine wheat and the lowest quotations for No. 3 Manitoba Northern. Thus the spreads in Table II are really minimal spreads.

Detailed analysis of these spreads (Chart 1) reveals both major and minor points of interest. There is not much suggestion of the existence of recurrent and well-marked seasonal influence; the most obvious appears to be a tendency toward increase in the premium of Canadian over Argentine wheat between October–November and January–February. In three of the five years, the premiums declined markedly from March to June–July; but in the other two years this did not occur. The course of the spreads was erratic in the first three months of each crop year.

There were times, though only rarely and mostly early in the crop year 1930–31, when there were no Pacific parcels quotations, but only prices of Atlantic parcels shipments. There were no quotations of shipments from either coast early in 1931, so that no spreads could be computed for January–February 1931. Shipments from Vancouver were resumed in March, while quotations on Atlantic parcels were not in evidence until June. In December–March 1931–32 Atlantic parcels shipments were lacking; and again in 1932–33, extending throughout the late autumn, the winter, and spring and with only desultory quotations during the next summer. During 1933–34 there were only 4 weeks wherein Atlantic shipments were quoted, and in 1934–35 only 11 weeks, in September–November. But over the whole period of five years, there were

only 17 weeks, of which 15 were in 1930–31, when quotations were not available for Vancouver shipments.

CHART 1.—PRICE SPREADS BETWEEN CHEAPEST NO. 3 MANITOBA NORTHERN AND DEAREST ARGENTINE WHEAT IN BRITISH MARKETS, WEEKLY FOR FIVE CROP YEARS*



* Data in Table II.

This irregularity of shipments of parcels from Atlantic ports, while continuing from Vancouver ports, merely means that for one reason or another shipments from Vancouver were practicable in parcels, whereas shipments from Atlantic ports occurred mostly in cargoes. This lack of parallelism in parcel shipments from Pacific and Atlantic ports may tend to be misleading, but this seems unavoidable.

The following tabulation brings together, for each crop year, (a) the number of weeks in which Canadian and Argentine wheats respectively sold at premiums one over the other; (b) the arithmetic averages of the pre-

miums applicable to Canadian wheat when it stood at a premium, and similarly for Argentine wheat; and (c), as another method of measuring annual average spreads, the medians of arrays which include data for the weeks in which Canadian wheat stood even with or at a discount below Argentine as well as the weeks (much more numerous) in which it stood at a premium, and also the weeks in which spreads were not calculable.

August- July	No. of weeks ^a		Average premium ^b		
	Can- adian wheat	Argen- tine wheat	Can- adian wheat	Argen- tine wheat (52 weeks) ^c	Can- adian
1930-31	40	4	3.3	1.5	3.3
1931-32	39	12	3.5	2.0	2.8
1932-33	31	19	2.8	2.1	1.2
1933-34	52	0	7.1	...	7.8
1934-35	50	0	9.1	...	10.1

^a In the three earliest and the last years spreads could not be computed in some weeks, and in others neither Canadian nor Argentine wheat stood at a premium.

^b Canadian cents per bushel.

^c Median premium of Canadian over Argentine wheat, counting all weeks in every year and assuming absence of Canadian quotation as equivalent to a high Canadian premium.

In each of the five years, Canadian wheat was at a premium in more than three-fifths of the weeks in each year. In the first three years, the average premium of Canadian wheat over Argentine was low and tended to decline. Detailed evidence in Table II shows that this decline came with reference to wheats shipped from Vancouver; hence the general decline was in some part a reflection of declining quality of Vancouver wheat as Garnet became more prevalent in the No. 3 Manitoba grade. Of the three earlier years, the last (1932-33) therefore showed Canadian wheat at the lowest price advantage; in only 31 weeks did Canadian wheat command a premium, while in 19 weeks Argentine wheat stood at a premium (with stand-off in 2 weeks).

Considering these earliest three years together, the preponderance of weeks in which the No. 3 Canadian wheat stood above the f.a.q. Argentine wheat and the extent of the premiums in each direction corresponded to the general idea of the trade, and provoked little wonder or comment. Then occurred a sharp change.

In 1933-34 Canadian wheat stood at a pre-

mium in each of the 52 weeks, judged by averages. The average premium also was much higher than in the previous three years, 7.1 cents (median 7.8 cents) per bushel. In individual weeks, the average premium was as much as 12.9, 12.7, 12.4, 11.7, 11.3, and 11.1 cents; the spreads on individual days were sometimes notably higher. In the last year, 1934-35, averages were computable in 50 weeks, in each one of which the Canadian wheat stood at a premium, judged by averages. The average premium in this year was 9.1 cents (median 10.1 cents) per bushel. In individual weeks the spread was as much as 15.3, 14.9, 14.5, 14.0, and 13.8 cents; and on individual days the spread was still higher.¹

No student of the wheat market can scan these weekly averages over five years without being driven immediately to the inference that some factor forced Canadian wheat upward and/or Argentine wheat downward during the last two years, a factor not in evidence during the first three years. The average spread in the first three years was 3.2 cents, but in the last two years no less than 8.1 cents.

The implication of these spreads may be suggested in another way. The Canadian quotations were on the cheapest No. 3 Manitoba Northern. Under these circumstances one is led to wonder what would have been the spread if No. 4 Manitoba had been offered instead of No. 3. The difference in value between No. 3 and No. 4 may be stated fairly to be 5 cents per bushel—more in some years and less in others; but certainly it is fair to take 5 cents per bushel as difference in value between the lowest quotation of Canadian No. 3 in England and standard No. 4. With the use of this figure, we can then pose a question. In how many weeks of the five-year period would a price equivalent to No. 4 Manitoba have compared with that of top-grade fair average quality Argentine wheat? In the first year the average premium of the Canadian wheat could have been reduced by 5 cents and would still have stood above the Argentine price in 9 weeks. In 1931-32, the average Canadian pre-

¹ In WHEAT STUDIES, September 1935, XII, 33, are to be found Liverpool Tuesday prices of Canadian and Argentine wheats, May-August 1935, which tell the same story, with even wider spreads.

mium could have been reduced by 5 cents and would still have exceeded or equaled the Argentine price in 6 weeks. In 1932-33 the average Canadian premium could have been reduced 5 cents and would still have stood above, or equal to, the Argentine price in 2 weeks.

But in 1933-34, the average Canadian premium could have been reduced by 5 cents and would have remained over the Argentine price in 34 weeks; and in 1934-35 the average Canadian premium reduced by 5 cents still would have stood above the Argentine price in 42 weeks. Indeed, if one will take the customary spreads in Canadian cash wheat between No. 3 and No. 4, and between No. 4 and No. 5, sellers' quotations could have been found on the London market according to which No. 5 Canadian wheat might have been sold at prices equivalent to those of f.a.q. Argentine wheat. In the price material of earlier years, one seeks in vain, apart from obvious instances of wheat in distress, to find premium ratings of Canadian wheat over Argentine wheat comparable with those displayed during the last two crop years, 1933-34 and 1934-35.

CAUSES OF RECENT HIGH PREMIUMS ON CANADIAN WHEAT

At once the question arises whether the higher spread during 1933-35, compared with that during 1930-33, could have been due to any notable shortage in the Canadian supply or to any notable abundance in the Argentine supply.

The following tabulation shows for Argentina and Canada during the five crop years under review the figures for crops, net exports of wheat, and carryovers, in million bushels:¹

Aug.- July	Canada			Argentina		
	Crop	Net exports ^a	Carry-over ^b	Crop	Net exports ^a	Carry-over ^b
1930-31 ...	421	258	134	232	125	80
1931-32 ...	321	207	132	220	140	65
1932-33 ...	443	264	212	241	132	75
1933-34 ...	282	194	194	286	147	118
1934-35 ...	276	165	203	238	182	80

^a Wheat and flour as wheat.

^b As of July 31, the end of the Canadian crop year.

It is important regarding this tabulation to

¹ Data from WHEAT STUDIES, September 1935, XII, 34.

keep in mind that over the entire five years the wheat market of Great Britain had the complexion of a buyers' market, due to obvious preponderance of exporters' surpluses over importers' requirements, as revealed in the successive figures for world carryovers.

Nothing in this tabulation suggests a situation of supply and demand during the two years 1933-34 and 1934-35, contrasted with the three earlier crop years, that would explain the large increase in premium of Canadian wheat over Argentine wheat. The Canadian crops of 1933 and 1934 were smaller than those of the three previous years and the net exports from Canada were below the lowest export of the first three years; on the other hand, the carryovers were larger in the last two years than in two of the first three years. Certainly no one could intimate that the lesser crops of wheat in 1933 and 1934, when combined with the carryover from the crop year 1932-33, suggest a physical shortage in Canadian wheat in the crop years 1933-34 and 1934-35. The average Canadian supply from crop and carryover was only about 35 million bushels smaller in 1933-35 than in 1930-33.

The Argentine crops of 1933 and 1934 were somewhat larger than those of the three preceding years and the net exports considerably higher; but the outgoing carryovers were higher also, especially in one year. These data hardly suggest a notable situation of excess supply, with obvious pressure on the market, though Argentine supplies from crop and carryover averaged 57 million bushels more in 1933-35 than in 1930-33. From the standpoint of physical supply alone, the data could not be interpreted as justifying selling pressure on the part of Argentina significantly more than on the part of Canada. Certainly if one will contrast the carryovers of each country during the past five years, the signs of physical distension of the terminal markets must be as obvious in Canada as in Argentina.

But perhaps the spreads reflected qualitative rather than quantitative influences. It is known that No. 3 Manitoba Northern wheat graded down from No. 2 for certain defects would be better in the British mix than another No. 3 Manitoba Northern wheat graded down for a different defect. There is no evi-

dence that during the five years under review the qualities of Argentine wheat were particularly good during the first three years and the qualities of No. 3 Manitoba rather poor, with reversal of the situation during the last two years. The fact is rather the opposite. Particularly for the two crop years 1933-34 and 1934-35, the quality of Argentine wheat has been high, and this especially has been the case with the highest test weights and the highest-priced shipments—mostly from Bahia Blanca—considered in this study. On the other hand, the qualities of No. 3 Manitoba wheats during the past two years have not been significantly superior to those of the previous three years—if anything, the reverse. Quite certainly, therefore, we may conclude that the sharp difference in prices, with pronounced widening of spreads, during the past two years contrasted with those of the previous three years—practically 5 cents per bushel—were not due to corresponding differences in the qualities of the two wheats. In short, we may say that on grounds of quality, as well as on grounds of quantity adduced above, there is nothing on a milling basis to explain the divergencies that existed between the prices of Canadian and Argentine wheat on the London market during all of the past five years, and especially during the last two crop years.

Naturally it comes to mind whether the position of the wheat price level could have had anything to do with the extent of spreads between prices of Canadian and Argentine wheats. Apparently not. The highest prices were seen in the first year, when both Canadian and Argentine wheat passed the Canadian dollar mark, and the low prices were around 60 cents. In the second year the highest prices were in the 80's, while the lowest prices were in the 50's. In the third year prices improved somewhat, with the highest quotations in the 90's, but the lowest quotations still in the 50's. In the fourth year the highest quotations were in the 90's, while the lowest quotations rose into the 60's. In the fifth year the highest quotations were in the 90's, while the lowest quotations were in the 70's. The price level of the last two years may fairly be said to have been in the middle of the five-year range. Yet it was in these last

two years that the spreads between Canadian and Argentine wheats were the widest.

Whenever Canadian wheat stands at a significant premium over other wheats in Great Britain, one or all of three adaptations are carried out. (1) When Canadian wheat is cheap, some of it may be used as filler; when all Canadian wheat stands at a relative premium, other filler wheats are sought. (2) When Canadian wheat is relatively cheap, the millers stand to use appreciable amounts of No. 3 and No. 2 as backbone in the mix; when all Canadian wheats are relatively dear, then lower-priced wheats are sought for backbone. (3) When Canadian wheat is relatively cheap, large proportions are employed as strengthener; when all Canadian wheats are relatively dear, the miller uses the least possible amount of Canadian wheat as strengthener. According to records of an individual English mill in the possession of the writer, during the past five years the proportion of Canadian wheat for a certain mix has varied from 9 to 26 per cent. In this variation, the price of Canadian wheat has been one outstanding factor; not the sole factor of course, since availability of other wheat of good quality has aided the mill in reducing the proportion of Canadian wheat when reduction was sought to escape high price.

The same consideration applied with still greater force to other importing countries. Whenever Canadian wheat is relatively dear, it will maintain its position in the mill mix better in Great Britain than in the countries of western Europe. In the ex-European importing countries, in Central and South America and particularly in Asia, a high price of Canadian wheat acts as a deterrent to use of, and an encouragement to substitution with, other wheats and to some extent with other cereals. We may be sure that when the story of the relations of imports of Canadian wheat into various countries during the decade 1926-36 comes to be written, the lesser dispensability of Canadian wheat in the British markets, or conversely the greater dispensability of wheat in other markets, will be made clear.

The significantly widened spreads between the cheapest No. 3 Manitoba Northern wheat and the dearest Argentine wheat in England

provoke inquiries which cannot be settled at present. Regarding the prices of Canadian and Argentine wheats as on an isolated market, a widened spread might imply (a) that Canadian wheat had been offered at higher prices, (b) that Argentine wheat had been offered at lower prices, or (c) that both deviations had occurred. Contrasting the two years 1933-34 and 1934-35 with the three previous crop years, one is in no position directly to determine whether these widened spreads were due to elevated Canadian prices or depressed Argentine prices. However, collateral evidence in the operation of the wheat trade in the two countries is available.

Is there evidence that Argentina dumped wheat on the English market during the past five crop years and especially during the last two? Merely because the country had a market plethora of an unexpected exportable surplus of wheat is not evidence that therefore wheat was dumped abroad. In December 1933 the Argentine Grain Regulating Board began purchasing wheat at fixed prices, and sold wheat at auction for export, at prices permitting resale of the wheat on the British market and in continental Europe. During 1933-34, considerable wheat was sold by the Argentine Grain Regulating Board at less than the minimum purchase price, and the loss was absorbed by the government. In the early months of 1934-35, on the contrary, much of the remaining stocks was sold above the minimum purchase price, at a profit going far to offset the loss of the previous year. If the term "dumping" be used in a vernacular sense, it might have been said casually during 1933-34 that the Argentine government was "dumping" wheat in England, though the effect of the Board's operations was to retard export shipments for several months; but even this could not have been said, in the same sense, to apply to 1934-35.

The rather free-and-easy implication that the liberal sale of Argentine wheat in England and the wide spreads between the prices of Argentine and Canadian wheats indicated a "dumping" might be supported by one or both of two arguments. The first argument is that Argentina was using the low wheat price in order to familiarize British and European

millers with her wheat, to the disadvantage of Canada. To this the adequate rejoinder is that the British and European millers did not need to be taught the qualities, advantages, and disadvantages of Argentine wheat, with which they were fully conversant. The second argument runs to the effect that Argentine wheat (especially softer varieties) had to be offered at a relatively low price in Europe, and especially in Great Britain, in order to be sold in competition with soft red or white wheats exported to Great Britain from western European countries, especially France. It is true that cheap French soft wheat was dumped in England; but there is no indication that a reduction in price of "up-river" Argentine wheat was carried out in order to displace cheaper European wheats. In any event, the quotations used by us are for the best samples of hard winter wheat, not for poorer up-river samples that competed with soft export European wheats.

To one acquainted with the technique of the British milling industry, it seems sufficient to assume that the millers, out of a large number of available wheats, prepared their blends to take account of both price and quality, and thus assigned to Argentine wheat, on the basis of technical considerations, the prominent place it occupied during these two years. Indeed it seems certain that the high price and limited import of Canadian wheat expanded the volume of import and helped the price of Argentine wheat.

On the other hand, there can be no question of the occurrence of motivated support of the price of Canadian wheat in Europe. Canadian wheat is exported to Europe chiefly on the basis of the futures quotations on the Winnipeg Board of Trade. Now the Winnipeg future during the last two years has been above export parity. This high position of the Winnipeg price has been maintained despite the presence in terminals of heavy exportable surpluses. It is not denied that the official policy has been to support the price, both directly and indirectly, in order that farmers should receive a higher price for wheat. The purpose of wheat control has been to improve the farm price. The moment it is recognized that governmental policy in administration of the

carryover and current surplus of wheat in Canada has sought to elevate, or peg, the Winnipeg price (to the advantage of Canadian wheat growers), it follows at once that this has been responsible for elevated prices of that wheat in Great Britain, unless exports to Great Britain have been done officially with disregard of the Winnipeg price. Putting it another way, when it is recognized that the wheat price in Winnipeg has been supported or pegged, it follows, ipso facto, that the price of Canadian wheat in Great Britain has been artificially supported. Combining this conclusion with the inference of the last paragraph, we are driven to the inference that the wide spread between the prices of Canadian wheat and Argentine wheat in Great Britain has been due demonstrably to Canadian tactics of price maintenance and has not been due demonstrably to the dumping of Argentine wheat at lower prices.¹

The effect of the relatively high price of Canadian wheat is felt moderately in the British market, more severely in the markets of western European countries, and with greatest severity in the ex-European markets, especially in Asia. The expansion of Australian and the contraction of Canadian exports to Asiatic markets is in large part traceable directly to the artificial price of Canadian wheat. The surprising maintenance of British importation of Canadian wheat during the past two crop years is evidence of the high esteem in which hard spring wheat is held by millers and of their willingness to pay premiums in order to maintain quality and uniformity. The past five years, and especially the last two years, have forced British, and still more continental European, millers to study the making of uniform flour of good behavior with less use of hard spring wheat. Without question, progress has been made in this direction; henceforth in the marketing of Canadian wheat, greater resistance to, or conversely less predilection for, Canadian wheat will be in evidence than was the case

¹ We note a curious feeling in Canada and England that it is odious to have held up the price of Canadian wheat abroad. If it is equitable to seek a higher price for the growers of Canadian wheat, it is not odious but proper to expect the consumers both at home and abroad to pay for it.

a decade ago. The Canadians in authority have made the assumption that hard spring wheat up to a certain point was so necessary, in British flour especially, that adaptations could not be contrived to get along with less of it. This complacent assumption has been refuted by milling experiences during recent years. Without question European millers are now able, using a comparable assembly of wheats, to mill a satisfactory and uniform flour with the use of five or ten parts of hard Canadian wheat less in the hundred parts than they believed necessary a decade ago. Whether British millers will return promptly to their earlier blending, if, as, and when Canadian wheats are once more made relatively cheaper, remains to be seen. It is an old experience in manufacturing that substitution, once used, is not lightly discarded.

Of greater political interest is the question whether Great Britain during the last two crop years purchased less Canadian wheat on account of its high price relative to other wheats. British technical opinion is strongly to that effect. The opinion in international grain circles runs also to that effect. Even the Argentine, with the highest devotion to his hard winter wheat, concedes that more Argentine wheat was taken in Great Britain because the Canadian price was out of line.

There is a common opinion in Canada, however, that the British market could not have been induced to absorb a larger amount of Canadian wheat. Those adhering to this view hold that a reduction in price of Canadian wheat would have been followed immediately by a corresponding reduction in price of Argentine wheat, with the net result that the British would have purchased the same amounts of each as they used, but would have secured the importations at lower prices. This argument implies a definite shift in what may be termed spread psychology in Argentina, from the three years 1930-33 when the spread was on the average 3.2 cents to the two years 1933-35 when the spread was on the average 8.1 cents. Just why, if the Canadians had lowered the price, the Argentines would have done so just to the extent of maintaining the spread at 8.1 cents, rather than the spread of 3.2 cents, is not easy to

grasp. Such an argument requires proof, particularly when it is contrary to theory and practice; but it is not disproved simply because it is contrary to theory and practice.

The proof or disproof will probably be obtainable after another two years. For five years, the international wheat market has had the complexion of a buyers' market, weakened by abnormal world carryovers. As a result of short crops in North America, Argentina, and Australia, it now seems probable that at the close of the present crop year (July 31, 1936) the abnormal carryovers will be reduced about to normal levels, within reasonable limits, quite irrespective of price movement. For the crop year 1936-37, the adjustment of importers' requirements and exporters' surpluses will then depend on the new crop and not on excessive carryovers. Under these circumstances, we take it that the record of exports of Canadian wheat during the next two crop years, and in particular the record of imports of Canadian and other wheats into the United Kingdom during that time, will give an answer to the question of the effect of Canadian prices on export volume, when the experiences of 1935-37 are contrasted with those of 1933-35 and those of 1930-33. Without question, the wheat traders of the world will expect to have it shown that higher prices of Canadian wheat have reduced volume of exports. Neutral observers will exact proof that the Canadians have been able to secure higher prices for export wheat without loss in the amount of wheat exported. A lesson to the contrary is now to be found in the record of high prices and low exports of American farm products. Other things equal, the Canadians cannot (without export subsidy) eat their cake of large exports and keep their cake of relatively high farm prices.

CONCLUDING OBSERVATIONS

It seems appropriate to conclude with general observations on the specific topic of the "world price" of wheat. Certainly the stipulation in the scheme of Empire preference that the Dominions should supply Great Britain with wheat at the "world price" and in "sufficient quantities" would seem now to have

transferred the term "world price" from a general to a specific category. At the same time, it is necessary to realize that the conditions which attended the historical evolution of the term "world price" no longer apply. The term was evolved when export wheat of many different countries was sold in Great Britain by sample or under designations of fair average quality. When later two prominent wheat-exporting countries (the United States and Canada) adopted official gradings based on inspections, this introduced divergencies into the importing markets which previously had worked on sample and fair average quality. We take it that sooner or later the wheats of Argentina and Australia will be placed under official grading, perhaps not with six or more grades as in Canada, but certainly with four grades.¹ When this time arrives, the idea of a "world price" of wheat in Europe will become about as tenuous as the present idea of a world price of bacon.

To the British trader, the world price of wheat is naturally the price of Liverpool futures, the figure at which wheats from any part of the world may be tendered in payment of futures contracts. In Great Britain are equated the largest number of export wheats of the world. The Liverpool Corn Trade Association and the London Corn Trade Association have basis wheats, that is, wheats tenderable in fulfilment of contracts without premium or discount. They have also scales of premiums and discounts, modified from time to time, applicable to wheats regarded as better or poorer than the basis wheats. It seemed reasonable to have it inferred that any wheat which qualified as basis wheat thereby qualified as wheat at the world price—even though this is clearly not so applicable to wheats from the United States and Canada, which have federal gradings, as it is to other wheats which are annually subjected to stipulations of "fair average quality" in Liverpool and London. At the same time, the British trader recognizes that the validity of the world price of wheat thus determined in the Liverpool futures is to some extent dependent upon, or qualified by,

¹ Without question, Europe will resist the introduction of further "certificates final" from wheat-exporting countries.

the position of the futures in Winnipeg, Chicago, and Buenos Aires. Clearly the implication of the Liverpool futures is qualified now in the presence of high futures quotations based on federal grading in Chicago and Winnipeg, in a sense that would not apply were all export wheats shipped under stipulations of fair average quality.

The British miller when buying wheat accepts the view of the trader. But at the same time, to the miller as processor the definition has become qualified. When at a particular time the mix of a mill contains a half-dozen imported wheats purchased all the way from 20s. to 30s. per quarter, the miller as processor would be at a loss to state which one represented the world price of wheat. Here the blending of wheats carrying foreign federal gradings with those carrying fair average quality stipulation confuses the definition of a term which looks quite simple when based directly upon a price of futures. Perhaps it is the preferred British policy to buy premium wheats from Canada and Australia, then to obtain the cheaper backbone wheats in Argentina, and finally to pick up the still cheaper filler wheats from any other country and in any type or variety of wheat.

The price of wheat in the United States fairly may be found to be the price of the Chicago futures. In tendering wheat in delivery on futures contracts in Chicago, the cheapest one of stated grades of Northern Spring, Soft Red Winter, and Hard Red Winter wheats may be offered. If over a term of years these prices and the wheats most advantageously tenderable are compared with the Liverpool future, with its basis and range in premiums and discounts, it is found that out of such comparisons one secures only a tenuous estimate of the world price of wheat.

In the case of Canada, where the top regular grade is the one tenderable in delivery on futures contracts, the disparity between the two systems for the purpose of constructing a world price of wheat is still more striking. Inferentially, Canada regards No. 1 Manitoba Northern wheat as the representative grade, since it is the basis wheat on the Winnipeg Grain Exchange. At the same time, it would go far wrong to assume that Canada expects

to have No. 1 Manitoba Northern made basis wheat in Liverpool and London on the same evaluation of quality as other basis wheats from other countries.

During the last two years the question has been made more precise. If we regard the price of the Liverpool future as reflecting the world price of wheat, and Great Britain expects the Dominions to supply wheat at the world price, then the position of the Winnipeg future (close to or above the Liverpool future most of the time) may be taken to indicate nonfulfilment of the spirit of Empire preference. How, asks the British trader, is it to be assumed that Canada is offering wheat at the world price when the Winnipeg future stands higher than the Liverpool future? The weakness of the question lies in the assumption that wheat is unity. Did Britain expect Canada (and inferentially Australia and India) to offer to supply to the mother country "at prices not exceeding the world prices" all of the wheat annually needed to cover the requirements of Great Britain above her domestic wheat production? Or did Great Britain expect the Dominions to supply "at prices not exceeding the world prices" only such amounts of wheat as might be desired after such other (duty-paid) supplies had been secured from ex-Empire sources as might appear desirable on various grounds? By leaving the definitions open, the British took the risk of application of a holding policy in Canada, perhaps intentionally in order to safeguard freedom of action in other directions.

The answer of the Canadian is that it was never contemplated to offer No. 1 Manitoba Northern at the same price as fair average quality wheat from different countries of the world. Canada does offer wheat at the world price: good wheat but not premium wheat, grades No. 3 or No. 4 Manitoba, but not grade No. 1 Manitoba. This answer is in a way fully as logical as the question of the British trader. But the references are to different things. Evidently the British were thinking of one thing in the Agreement and the Canadians were thinking of a different thing—each on the assumption that both sides had thought through the stipulation, and on the further assumption that the stipulation was not merely

a casual expression of politicians arrived at on grounds of compromise, but was the expression of grain traders and millers secured through the weighting of commodity factors.

It is our inference (from no great distance) that the British negotiators of the United Kingdom-Canadian Agreement did not keep their technical advisers close to them and did not appreciate adequately the commodity considerations. On the other hand, the Canadian negotiators seem to have known about what they were doing, on technical grounds. Perhaps the British were banking on general considerations, the Canadians instead on special considerations. The answer of the Canadians would, however, be in better form if No. 3 Manitoba were the basis wheat on the Winnipeg Grain Exchange. It is considered generally best on commodity exchanges to have as basis not the best grade, nor yet the poorest, but somewhere between—possibly one-third below the top and two-thirds above the bottom, allowing a considerable spread for premiums and discounts based on quality. The Canadian position exposed them to an accumulation of unsold wheat if the premium rating could be evaded by Great Britain, which is just what has occurred.

For several years it has been the policy of the Conservative Government of Canada under Premier Bennett to support the price of wheat. In an election held on October 14, the Liberal party, under the leadership of Mackenzie King, obtained control of the new Parliament with an outstanding majority. It is to be inferred that the policy in respect of encouragement of agriculture will not differ from that of the Conservative party. But quite certainly the people of the United Kingdom

will be surprised if the Liberal party maintains in Winnipeg an artificial wheat price which enforces in England a price of Canadian wheat significantly higher than the current prices of other available imported wheats.

In the scheme of Empire preference the Agreements are due for revision, presumably at regular intervals. If, before the date of the revision of the Agreements in respect to wheat, the Winnipeg prices decline to such an extent as to permit resumption of export in volume, according to experiences of earlier years, probably the present Agreement of Canada with England might be reaffirmed without change. But if the price of wheat at Winnipeg should remain close to or above the price of wheat at Liverpool, judged by futures, it seems probable that the British will seek a revision of the Agreement in order that their rights may be more accurately defined. Such a revision would need to include a redefinition of prices and price ranges, based on stipulations of type, variety, and quality of wheat. It ought to be possible to set up a world price of wheat at a datum point like England (using price as a narrow range) based on technical considerations of qualities, consumers' choices, and producers' gradings. But it will hardly be found possible to set up a reproducible definition, so long as trade considerations based on fair average qualities dominate the scene in the outstanding importing markets. Behind these contingencies lies the broad question of the extent to which the trade practices of European importers of wheats are in future more and more to become subjected to the grading systems of the countries which are the principal exporters of wheat.

This study is by Alonzo E. Taylor

TABLE I.—Continued
(Canadian cents per bushel)

Week ending	Prices			Spreads from Argentine		Week ending	Prices			Spreads from Argentine	
	No. 3 Man. (Atl.)	No. 3 Man. (Van.)	Argentine	No. 3 Man. (Atl.)	No. 3 Man. (Van.)		No. 3 Man. (Atl.)	No. 3 Man. (Van.)	Argentine	No. 3 Man. (Atl.)	No. 3 Man. (Van.)
1932						1933					
Aug. 6.....	65.6	64.4	66.1	-.5	-1.7	Aug. 5.....	....	89.1	81.2	...	+7.9
13.....	66.8	67.2	67.9	-1.1	-.7	12.....	....	84.0	77.1	...	+6.9
20.....	66.2	65.7	67.0	-.8	-1.3	19.....	....	74.5	70.4	...	+4.1
27.....	64.0 ^a	63.0	65.4	-1.4 ^a	-2.4	26.....	....	75.2	70.4	...	+4.8
Sept. 3.....	64.3	66.1	....	-1.8	Sept. 2.....	....	77.0	72.4	...	+4.6
10.....	64.6 ^a	64.8	67.2	-2.6 ^a	-2.4	9.....	79.4 ^a	78.2	73.5	+5.9 ^a	+4.7
17.....	62.8 ^a	62.1	65.1	-2.3 ^a	-3.0	16.....	78.5 ^a	77.3	73.0	+5.5 ^a	+4.3
24.....	61.8	64.8	....	-3.0	23.....	80.0 ^a	77.6	71.8	+8.2 ^a	+5.8
Oct. 1.....	61.6	64.3	....	-2.7	30.....	....	72.4	70.3	....	+2.1
8.....	60.5	62.3	....	-1.8	Oct. 7.....	....	68.8	68.3	....	+.5
15.....	59.0	59.2	....	-.2	14.....	....	66.5	64.4	....	+2.1
22.....	58.7	57.6	....	+1.1	21.....	....	65.4	62.0	....	+3.4
29.....	57.8	56.4	....	+1.4	28.....	....	70.9	69.2	....	+1.7
Nov. 5.....	57.1	54.1	....	+3.0	Nov. 4.....	....	69.6	68.2	....	+1.4
12.....	58.8	55.8	....	+3.0	11.....	....	71.0	70.8	....	+.2
19.....	59.1	58.2 ^b	....	+.9	18.....	....	72.9	72.3	....	+.6
26.....	59.3	61.8	....	-2.5	25.....	....	74.7	71.8	....	+2.9
Dec. 3.....	59.0	61.4	....	-2.4	Dec. 2.....	....	72.0	69.6	....	+2.4
10.....	57.7	61.0	....	-3.3	9.....	....	70.6	66.7	....	+3.9
17.....	55.5	59.7	....	-4.2	16.....	....	71.5	66.7	....	+4.8
24.....	54.2	58.3	....	-4.1	23.....	....	70.6	65.9	....	+4.7
31.....	54.2	55.3	....	-1.1	30.....	....	72.2	65.6	....	+6.6
1933						1934					
Jan. 7.....	57.1	57.1	....	0	Jan. 6.....	....	72.9	67.1	....	+5.8
14.....	58.9	58.6	....	+.3	13.....	....	74.5	66.8	....	+7.7
21.....	57.7	57.7	....	0	20.....	....	79.0	69.0	....	+10.0
28.....	57.8	58.0	....	-.2	27.....	....	77.5	66.4	....	+11.1
Feb. 4.....	58.0	59.0	....	-1.0	Feb. 3.....	....	78.8	66.1	....	+12.7
11.....	58.8	58.6	....	+.2	10.....	....	78.3	65.9	....	+12.4
18.....	59.1	57.6	....	+1.5	17.....	....	76.5	65.7	....	+10.8
25.....	58.7	56.3	....	+2.4	24.....	....	75.3	65.1	....	+10.2
Mar. 4.....	57.5	55.7	....	+1.8	Mar. 3.....	....	75.6	64.7	....	+10.9
11.....	62.0	57.8	....	+4.2	10.....	....	76.7	66.6	....	+10.1
18.....	61.8	57.5	....	+4.3	17.....	....	76.2	65.4	....	+10.8
25.....	60.0	57.8	....	+2.2	24.....	....	74.4	64.5	....	+9.9
Apr. 1.....	59.6	57.7	....	+1.9	31.....	....	74.0	64.7	....	+9.3
8.....	60.9	58.1	....	+2.8	Apr. 7.....	....	74.5	65.5	....	+9.0
15.....	61.9	57.9	....	+4.0	14.....	....	73.5	65.6	....	+7.9
22.....	64.8	60.5	....	+4.3	21.....	....	72.1	66.3	....	+5.8
29.....	68.0	63.5	....	+4.5	28.....	....	71.6	65.9	....	+5.7
May 6.....	72.7	68.7	....	+4.0	May 5.....	....	71.9	65.5	....	+6.4
13.....	74.0	70.8	....	+3.2	12.....	....	76.3	67.1	....	+9.2
20.....	73.4	70.4	....	+3.0	19.....	....	77.2	68.1	....	+9.1
27.....	70.7	69.0	....	+1.7	26.....	....	76.9	68.1	....	+8.8
June 3.....	74.2 ^a	72.6	70.8	+3.4 ^a	+1.8	June 2.....	....	82.5 ^a	71.2	....	+11.3 ^a
10.....	70.4	69.4	....	+1.0	9.....	....	82.0	72.4	....	+9.6
17.....	72.0	69.9	....	+2.1	16.....	....	81.6	72.6	....	+9.0
24.....	74.2	72.2	....	+2.0	23.....	....	82.3	72.2	....	+10.1
July 1.....	81.4	76.4	....	+5.0	30.....	....	82.1	71.5	....	+10.6
8.....	87.5 ^a	86.0	81.2	+6.3 ^a	+4.8	July 7.....	....	81.4	70.7	....	+10.7
15.....	93.2	86.8	....	+6.4	14.....	....	85.3	72.4	....	+12.9
22.....	91.8	88.8	....	+3.0	21.....	94.9 ^a	92.0	81.1	+13.8 ^a	+10.9
29.....	87.5	83.6	....	+3.9	28.....	....	94.0 ^a	82.3	....	+11.7 ^a

^a Computed from less than a full trading week's quotations, but more than one day's.

^b Import duty of 2s. per quarter added after November 18.

TABLE I.—Concluded
(Canadian cents per bushel)

Week ending	Prices			Spreads from Argentine		Week ending	Prices			Spreads from Argentine	
	No. 3 Man. (Atl.)	No. 3 Man. (Van.)	Argentine	No. 3 Man. (Atl.)	No. 3 Man. (Van.)		No. 3 Man. (Atl.)	No. 3 Man. (Van.)	Argentine	No. 3 Man. (Atl.)	No. 3 Man. (Van.)
1934						1935					
Aug. 4	.....	.....	87.1	...	...	Feb. 2	.....	84.6	70.6	...	+14.0
11	.....	.....	95.9	...	...	9	.....	84.3	69.0	...	+15.3
18	.....	98.1	90.9	...	+ 7.2	16	.....	85.1	70.2	...	+14.9
25	.....	95.6	89.7	...	+ 5.9	23	.....	85.0	71.0	...	+14.0
Sept. 1	93.2	92.2	87.6	+ 5.6	+ 4.6	Mar. 2	.....	85.0	70.5	...	+14.5
8	92.9	92.4	85.9	+ 7.0	+ 6.5	9	.....	85.2	71.4	...	+13.8
15	94.4	93.1	85.4	+ 9.0	+ 7.7	16	.....	85.8	72.0	...	+13.8
22	92.2	90.2	82.7	+ 9.5	+ 7.5	23	.....	86.7	74.7	...	+12.0
29	91.6	88.7	79.5	+12.1	+ 9.2	30	.....	88.1	77.6	...	+10.5
Oct. 6	88.0	84.3	76.3	+11.7	+ 8.0	Apr. 6	.....	90.3	80.2	...	+10.1
13	89.6	86.4	78.6	+11.0	+ 7.8	13	.....	93.4	82.4	...	+11.0
20	88.5	84.8	78.8	+ 9.7	+ 6.0	20	.....	94.0	82.8	...	+11.2
27	85.8	80.5	76.3	+ 9.5	+ 4.2	27	.....	92.7	81.5	...	+11.2
Nov. 3	85.1 ^a	78.8	74.4	+10.7 ^a	+ 4.4	May 4	.....	92.2	81.0	...	+11.2
10	88.4 ^a	82.0 ^a	76.2	+12.2 ^a	+ 5.8 ^a	11	.....	90.8	80.2	...	+10.6
17	.....	84.7 ^a	74.0	...	+10.7 ^a	18	.....	89.9	80.2	...	+ 9.7
24	.....	83.1	72.7	...	+10.4	25	.....	89.7	79.9	...	+ 9.8
Dec. 1	.....	83.8	73.6	...	+10.2	June 1	.....	86.5	77.8	...	+ 8.7
8	.....	86.0	75.6	...	+10.4	8	.....	85.3	79.6	...	+ 5.7
15	.....	85.8	75.8	...	+10.0	15	.....	83.8	79.2	...	+ 4.6
22	.....	84.0	73.9	...	+10.1	22	.....	84.3	78.2	...	+ 6.1
29	.....	84.0	72.9	...	+11.1	29	.....	82.8	78.4	...	+ 4.4
Jan. 5	.....	83.9	72.8	...	+11.1	July 6	.....	82.3	78.0	...	+ 4.3
12	.....	84.6	73.2	...	+11.4	13	.....	80.4	74.6	...	+ 5.8
19	.....	83.2	71.8	...	+11.4	20	.....	79.9	77.2	...	+ 2.7
26	.....	84.5	71.6	...	+12.9	27	.....	82.7	82.6	...	+ .1

^a Computed from less than a full trading week's quotations, but more than one day's.

TABLE II.—WEEKLY AVERAGE PRICE SPREADS BETWEEN CHEAPEST NO. 3 MANITOBA NORTHERN AND TOP-GRADE ARGENTINE WHEAT IN THE UNITED KINGDOM, AUGUST 1930–JULY 1935*

(Canadian cents per bushel)

Week number	1930-31	1931-32	1932-33	1933-34	1934-35	Week number	1930-31	1931-32	1932-33	1933-34	1934-35
1	+4.6	+2.7	-1.7	+ 7.9	...	27	...	+4.0	-1.0	+12.7	+14.0
2	+3.1	+4.7	-1.1	+ 6.9	...	28	...	+4.5	+ .2	+12.4	+15.3
3	-1.4	+5.0	-1.3	+ 4.1	+ 7.2	29	...	+4.8	+1.5	+10.8	+14.9
4	+ .2	+5.8	-2.4	+ 4.8	+ 5.9	30	+9.3	+5.6	+2.4	+10.2	+14.0
5	-1.3	+3.9	-1.8	+ 4.6	+ 4.6	31	+8.8	+5.0	+1.8	+10.9	+14.5
6	-3.1 ^a	+3.3	-2.6	+ 4.7	+ 6.5	32	+7.3	+5.4	+4.2	+10.1	+13.8
7	+ .2	+3.8	-3.0	+ 4.3	+ 7.7	33	+7.4	+4.0	+4.3	+10.8	+13.8
8	+2.2	+6.6	-3.0	+ 5.8	+ 7.5	34	+6.7	+2.5	+2.2	+ 9.9	+12.0
9	+3.4	+3.0	-2.7	+ 2.1	+ 9.2	35	+6.1	+2.6	+1.9	+ 9.3	+10.5
10	+2.1	+1.4	-1.8	+ .5	+ 8.0	36	+5.9	+2.3	+2.8	+ 9.0	+10.1
11	+ .3	+1.4	- .2	+ 2.1	+ 7.8	37	+5.2	+1.9	+4.0	+ 7.9	+11.0
12	+1.7 ^a	+3.0	+1.1	+ 3.4	+ 6.0	38	+5.9	+1.2	+4.3	+ 5.8	+11.2
13	+ .6 ^a	+3.9	+1.4	+ 1.7	+ 4.2	39	+3.8	- .5	+4.5	+ 5.7	+11.2
14	+ .8	+3.0 ^a	+3.0	+ 1.4	+ 4.4	40	+3.3	-1.0	+4.0	+ 6.4	+11.2
15	+1.1	+2.4	+3.0	+ .2	+ 5.8 ^b	41	+4.6	0	+3.2	+ 9.2	+10.6
16	-.3 ^a	+2.0	+ .9	+ .6	+10.7 ^a	42	+4.0	-.3	+3.0	+ 9.1	+ 9.7
17	+1.1 ^a	+3.3	-2.5	+ 2.9	+10.4	43	+4.0	-.6	+1.7	+ 8.8	+ 9.8
18	+1.4 ^a	+3.6	-2.4	+ 2.4	+10.2	44	+4.2	-1.6	+1.8	+11.3 ^a	+ 8.7
19	+1.3	+4.9	-3.3	+ 3.9	+10.4	45	+2.4 ^a	-4.9	+1.0	+ 9.6	+ 5.7
20	+1.9 ^a	+3.3	-4.2	+ 4.8	+10.0	46	+2.5	-2.3	+2.1	+ 9.0	+ 4.6
21	+1.1	+1.9	-4.1	+ 4.7	+10.1	47	+3.0	-3.5	+2.0	+10.1	+ 6.1
22	...	+2.6	-1.1	+ 6.6	+11.1	48	+3.3	-3.9	+5.0	+10.6	+ 4.4
23	...	+4.8	0	+ 5.8	+11.1	49	+2.6	-2.8	+4.8	+10.7	+ 4.3
24	...	+4.6	+ .3	+ 7.7	+11.4	50	+2.0	-2.6	+6.4	+12.9	+ 5.8
25	...	+4.1	0	+10.0	+11.4	51	+3.5	+ .2 ^a	+3.0	+10.9	+ 2.7
26	...	+4.2	-.2	+11.1	+12.9	52	+.4	-.1	+3.9	+11.7	+ .1

* Data from Table I. The spreads are calculated between the price of Argentine wheat and the lower of the two prices (when two are given) of Canadian wheat.

^a Computed from less than a full trading week's quotations, but more than one day's.

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