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WHEAT FUTURES PRICES AND TRADING
AT LIVERPOOL SINCE 1886

Holbrook Working and Sidney Hoos

World-wide influences affecting wheat prices converge to a peculiar degree in the British market for imported wheat. Representative prices of such wheat deserve better than any others to be regarded as "world" wheat prices. The average price of all wheat imported into the United Kingdom seems the most broadly representative of the various series. Better for some purposes is the monthly average of spot prices of "good red wheat" compiled by Broomhall, or the average parcels price which we compile. For short-period comparisons, prices of Liverpool wheat futures are best of all.

Comparisons among these series show that the futures prices are in fact admirably representative of the general level of prices of British imported wheat and are useful for long-period as well as for short-period comparisons. Accompanying tables and charts give a complete record of the prices of Liverpool wheat futures monthly and weekly from 1886, for five delivery months in each year.

That Liverpool futures so well represent the general level of imported wheat prices is a result of effective adaptation to difficult conditions. The history of the Liverpool futures contract is one of progressive improvement. A prime objective in the evolution of the contract has been adaptation to the needs for hedging wheat in channels of international trade.

From the standpoint of volume of trading or volume of open contracts, the Liverpool futures market ranks far below Chicago and Winnipeg. It is pre-eminent in balanced reflection rather than in generation of price influences. A large proportion of its business originates with hedgers, and with speculators who take a long view of the price outlook. Although peculiarly vulnerable to "corners" and "squeezes," Liverpool has succeeded remarkably in avoiding such manipulation.

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WHEAT STUDIES
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Holbrook Working and Sidney Hoos

Liverpool wheat futures prices are peculiarly valuable as an index of world wheat prices. They mirror in greater detail and with more fidelity and better balance than most other prices the manifold influences in the international wheat market. A continuous record of these prices may be had from 1886, with the exception of a period when the futures market was closed during and shortly after the World War. The present study undertakes to make this valuable price record conveniently available to students of prices and of the economics of wheat.

The daily prices which are found in the original price records are so voluminous as to discourage their use. These are here condensed into monthly and weekly averages. The monthly data are sufficient for many purposes and have the advantage that they may be used with less labor than data at more frequent intervals. The weekly data meet nearly all requirements for which a detailed price record is likely to be wanted over a long period of years. The charts in which the full record of weekly prices appears in graphic form will be found to have distinct advantages over charts based on monthly data. These have been reproduced in a size permitting direct comparison with similar charts of Chicago futures prices which we have published previously.

Earlier issues of WHEAT STUDIES have dealt with the relations between prices of cash wheat and of futures at Chicago, and the relations between futures prices for delivery in different months. The present study begins a similar treatment of prices at Liverpool. A more detailed analysis of the data will appear in a subsequent issue of WHEAT STUDIES. In the tables here given the weekly price record is paralleled by a weekly record of inter-op-

tion price spreads, thus presenting in one place the whole body of weekly price data required for a study of relations among Liverpool wheat futures. In the textual description of the price series, features that might appear negligible from the standpoint of any one price series are given attention appropriate to their significance for price spreads. Analysis of price relations in the present study is restricted to comparison of prices of the near futures with two British "cash" wheat price series.

Futures prices are less used by academic students of prices than they deserve to be because they are poorly understood. To many, they appear esoteric and artificial—not to be

trusted to reflect the facts of a price situation. To one who understands them, however, they may convey nearly all of the information obtainable from any single cash price series, and much more besides. The text of the present study is primarily an exposition of the meaning of the price data; but these are closely related to the market in which the prices are made, and are dependent upon the traders who make them. Accordingly we present (1) a discussion of the degree to which Liverpool futures prices may be viewed as representative of British wheat prices and, more broadly, of world wheat prices, with some consideration of the influence of the futures market in general price determination; (2) a description of some technical aspects of the futures market which are significant from the standpoint of price, and of the types of trading on the market; and (3) an account of the evolution of futures trading at Liverpool, considered primarily from the standpoint of the significance and representativeness of the prices, but attempting some interpretation as well as description.

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I. SIGNIFICANCE OF LIVERPOOL FUTURES

A reasonably active, well-administered futures market makes available price quotations that are more frequent and more accurately standardized than any cash price series obtainable; and such quotations may be more broadly representative than any single cash price series of the range of prices of different wheats on the market. An active futures market plays an important part in the making of wheat prices—the determination of the wheat-price level and its fluctuations. And an active futures market contributes appreciably to the economical handling of wheat in its movement from producer to consumer.

The significance of Liverpool wheat futures deserves consideration from each of these standpoints. We are here peculiarly concerned with (1) the characteristics of futures prices for representation of wheat price movements and price levels. Attention will be devoted also in this section to (2) the significance of the Liverpool futures market in price determination.

REPRESENTATIVE BRITISH PRICES

The position of the United Kingdom as a wheat importer renders prices of British imported wheat peculiarly appropriate to represent "world" wheat prices. At the same time it involves special difficulties in obtaining consistency and continuity in such price series. If consistency be sought through use always of prices on wheat of a given type, grade, and origin, the series tends to be equivalent merely to quotations on that description of wheat in the country of origin, plus handling costs. British prices so compiled have little or no superiority in representativeness over prices in the country of origin. They tend to have the disadvantage of being only irregularly available. In order to obtain a British wheat price series that is peculiarly representative of world wheat prices, it is necessary to use a flexible basis for selection of the quotations.

Two general methods have been employed for obtaining price series on British imported wheat that may be considered reasonably consistent and representative. One is the method

of varying the description of the wheat quoted according to the judgment of the compiler of the statistics; the other, that of using a "naturally weighted" price average of a wide range of wheats. The first method is represented in Broomhall's compilation of spot prices of "good red wheat" at Liverpool and a similarly designated compilation prepared by the United States Department of Agriculture, partly from Broomhall's series and partly as an original compilation. The second method is represented in our compilations of the average customs price of British imported wheat and of the average "parcels price."

"Good Red Wheat" prices.—Broomhall's series of prices of good red wheat prior to about 1904 is made up mainly from prices of either hard or soft red winter wheats from the United States. Prior to 1889, however, quotations on red spring wheat from the United States were used in some years, and in a few months the quotations represent Californian (white) wheat.¹ From about 1904, Broomhall often used Argentine wheat as the basis of the quotations, and sometimes Canadian wheat. In recent years he has occasionally used Australian wheat quotations in the series.² The Broomhall series has thus varied widely in the description of wheat quoted, sometimes even to the extent of quoting a white wheat rather than a red wheat.

The series of Liverpool prices of "good red wheat" compiled by the United States Department of Agriculture³ represents, prior to 1904, merely the Broomhall series converted to cents per bushel. For the years 1904–1913 and in some post-war periods it represents an origi-

¹ This is shown by notes accompanying tables in Broomhall's *Corn Trade Year Book* for 1904 and earlier years.

² In the spring of 1936, for example, when Australian wheats were the only ones being tendered on Liverpool futures. All our observations on the constitution of the Broomhall series since 1903, it should be noted, are based on comparison with quotations published in the *Corn Trade News*, since the tabulations in the *Corn Trade Year Book* do not now indicate what wheat they represent.

³ Published, for example, in *Wheat and Rye Statistics* (Stat. Bull. No. 12, January 1926), p. 84, and *Yearbook of Agriculture*, 1928, p. 689.

nal compilation by the Department of Agriculture from spot quotations in *Broomhall's Corn Trade News*. In these years it fails often to correspond with Broomhall's own compilation, and for two or more months each in 1904, 1905, and 1911 indicates absence of quotations. The principle of selection of quotations used by the Department of Agriculture is not entirely clear from casual comparison with the original source, but apparently they represent always wheat from the United States, and, where possible, wheat specifically designated in the quotation as "red." Quotations on Californian wheat seem to have been used in the spring of 1905, for months in which Broomhall was using Argentine wheat as the basis of his quotations.

British customs prices.—The customs price of British imported wheat is representative in a different sense from that of the Broomhall series for "good red wheat," and in a sense that is peculiarly significant from some standpoints. The monthly customs price is obtained by dividing the total reported value of all wheat imported into the United Kingdom by the quantity of wheat imported. It is thus a comprehensive average of reported prices of all wheat imported each month. It has the peculiarity that during much of the time, at least, it represents recent past prices rather than present prices. The values reported in customs declarations tend to be the prices at which the wheat was bought on a c.i.f. basis, often several weeks before its arrival and declaration. The series is thus not reliable as an index of month-to-month fluctuations in price. It suffers in precision to some extent from the fact that the amount of wheat represented per unit of weight reported may vary appreciably. Some imported wheats, notably Indian and Russian wheats in earlier years, contain a high admixture of dirt. In years when such wheats have bulked large in the imports, the average cost to British millers of their imported wheat, on a cleaned basis, has been somewhat higher than indicated by the customs price.

British parcels prices.—Another excellent representative price series is obtainable by averaging prices on all recorded sales of wheat on the British "parcels" market. Such

price averages, originally compiled by the Food Research Institute on a weekly basis for the period August 1922–June 1927, were tested by comparison with other series¹ and have since been regularly compiled and published under the name of "British Parcels Prices" in the Survey and Review numbers of WHEAT STUDIES. A similar series is compiled also by the United States Department of Agriculture. Like the British customs price, the parcels price is an average of prices of many types of imported wheat. In the customs price, the several types of wheat are represented in proportion to the total quantities imported; in the parcels price, they are represented in proportion to the number of parcels reported as purchased. Normally these two bases of weighting give closely corresponding results. At times, however, they differ appreciably, owing especially to the fact that Australian wheats, shipped largely in full cargoes, are much less adequately represented than Canadian wheats in parcels sales. The parcels price series has the marked advantage over the customs price series for short-period comparisons that it reflects current prices rather than recent past prices. The fact that it is available weekly is a further substantial advantage, despite its tendency to somewhat erratic behavior in week-to-week price changes. It partakes somewhat of the character of futures prices, since the component quotations usually are wholly on wheat not yet arrived in ports of the United Kingdom. At times the parcels price average has been rather heavily weighted with sales of Argentine wheat for shipment to arrive in the United Kingdom three to five months later.

REPRESENTATIVENESS OF FUTURES PRICES

Short-period changes.—Futures have a clear superiority over all other prices for representation of price changes over short periods. Quotations based on actual transactions may be had even at frequent intervals within each day. Other available quoted prices on imported wheat in the United Kingdom often are purely nominal for days at a time. The

¹ M. K. Bennett, "British Parcels Prices: A World Wheat Price Series," WHEAT STUDIES, July 1928, IV, 289-306.

spot market at Liverpool is now open only on Tuesdays and Fridays, and even on these days the published prices are sellers' quotations, which at times may be slightly out of line with general market opinion of the value of the wheat quoted. On the much more important c.i.f. market,¹ sellers' quotations are available daily, but quotations on actual transactions are irregular. The fact that sellers' quotations on both the spot and c.i.f. markets are often purely nominal usually detracts little from their usefulness, since these quotations are generally kept closely in line with market opinion, as reflected in futures markets of the United Kingdom and foreign countries. Nevertheless, the futures prices have a definite margin of superiority in the confidence with which they may be accepted. More important in practice, the quality of wheat represented by futures quotations is standardized to an extraordinary degree. Spot and c.i.f. prices are quoted on a considerable range of qualities, and c.i.f. quotations on a variety of different terms as regards time and other circumstances of delivery. Changes of a few pence per cental in spot or c.i.f. quotations may often reflect partly or mainly changes in the basis of the quotations.

Futures prices versus cash prices.—Discussions of futures prices often raise the question whether futures prices do not frequently get out of line with cash prices, or specifically allege that they do. Such discussion involves the assumption that there is a wide difference in character between futures prices and cash

¹ A substantial fraction of the wheat imported into the United Kingdom is purchased in the country of origin by the large milling concerns and thus is never dealt in on any British market. The larger fraction, however, is purchased from merchants by millers or other merchants in the United Kingdom. The purchases are made in parcel or cargo lots, usually on a c.i.f. basis. From this latter circumstance arises the designation "c.i.f. market." Such transactions occur partly at Liverpool and partly at London, but these two market centers may be regarded merely as divisions of the same market. The transactions only rarely involve wheat already arrived in port. Frequently they cover wheat on passage, but more often wheat not yet shipped.

² We followed this American practice in title and text of "Prices of Cash Wheat and Futures at Chicago since 1883," *WHEAT STUDIES*, November 1934, XI, 75-124.

prices. This assumption underlies also much discussion of the question whether cash prices tend to follow futures prices, or futures to follow cash. Such discussions tend to be unprofitable owing to mistaken assumptions or lack of critical discrimination. In the United States the term "cash price" tends to be used synonymously with "spot price," and in preference to that term.² If the question under discussion concerns the difference between prices on "spot" wheat and prices on wheat to be delivered at a subsequent date, then c.i.f. prices in the British market and what are called "to arrive" prices in North America should be considered in the same category with futures prices. Transactions in parcels and cargoes at Liverpool often involve much more futurity than do transactions in the near future.

Often the contrast drawn between futures prices and cash prices seems to turn on a distinction between speculative transactions and "actual" transactions. The speculative aspect of futures trading is important. An active speculative market may at times have a strong influence on prices. But it is futile to look for any significant difference between prices registered in connection with speculative transactions in futures and prices registered at the same time in connection with purely merchandising transactions that concern the same quality of wheat, specifying delivery on identical terms and at the same time and place. If the conditions associated with the contemplated delivery are identical in all essential respects, the price will tend to be the same whether registered in connection with a futures contract on which delivery probably will not be made, or in connection with a merchandising contract on which delivery will almost certainly be made.

In short, discussion of differences between prices of cash wheat and futures is meaningless unless the term cash wheat be defined identically with spot wheat. Then the discussion is reduced to one of the relation of price to time of delivery. The spot price gives one datum for consideration in such a discussion. The price of each separate future gives another datum. Often the relation of price to time of delivery is best considered in terms

of futures prices only.¹ In British markets, significant differences in price according to time of delivery sometimes appear more clearly in quotations on parcels and cargoes than in quotations on futures.² A major objective of compilation of the price data presented in accompanying tables and charts has been facilitation of the study of relations of price to time of delivery, in the British market, but the present study stops short of exploration of that topic.

Tendencies toward representativeness of level in futures prices.—The existence of a futures market depends upon its serviceability for the purposes of two complementary groups: speculators and hedgers. It is inconceivable that a futures market could be maintained without the participation of speculators, willing and even eager to accept the price risks that hedgers wish to transfer. It is a matter of practical observation that no futures market can flourish without the participation of hedgers. The choice of type and quality of the commodity which shall be the basis of the future tends to be determined by the interests of these two groups.

Speculators tend to prefer to deal in contracts for a commodity of standard quality. They tend to avoid dealing in contracts for a specialized type of commodity since it is readily apparent that they must be at a disadvantage in such dealings unless they possess specialized knowledge. Hedgers, on their part, are concerned that the type and quality of the commodity represented by the future should correspond as closely as possible with that of the commodity against which the hedge is being placed. The closer this correspondence, the more complete is the protection afforded by the hedge. But since occasion for hedging arises now in connection with one

type and quality and again in connection with another, a compromise is necessary. It is not feasible in practice to have several different futures contracts each adapted to a special class of hedging requirement because, given such a choice, speculators tend to concentrate trading in one type of contract, leaving the markets for the others so "thin" as to be of little use to hedgers. The interests of hedgers thus tend toward selection of a basis for futures contracts that will make the future as broadly representative as is possible of price movements of the different wheats to be hedged.

These tendencies favoring selection of a contract basis such that futures prices will be broadly representative encounter technical obstacles. How shall a contract for future delivery be framed in order to attain the desired price representativeness? The history of the Liverpool futures market is an illuminating record of progress in coping with this problem under difficult and changing circumstances. The present stage in its solution and the steps by which that stage has been reached are reserved for detailed discussion in subsequent sections of the present study. Here it suffices to summarize salient characteristics of the futures contract at different times.

At the beginning of our price record (1886), the futures contracts quoted called for tender of No. 1 Californian wheat. Use of this basis for the contract was favored by existence of special needs for hedging shipments of Californian wheat. The volume imported was large; the risk of price change while the wheat was on passage on the long voyage around Cape Horn, commonly in sailing ships, was great; and the New York and Chicago futures markets afforded only imperfect hedging facilities for this class of wheat. But probably the outstanding circumstance that determined the choice was the uniformity in quality of Californian wheat. A prime requisite for successful operation of a futures market is confidence in the reliability of the basis of the contract. Traders in Californian wheat futures, whether speculators, hedgers, or merchants expecting to make or take delivery on the contracts, could have confidence that the quality of the wheat represented by the contract would

¹ See for example Holbrook Working, "Price Relations between Prices of May and New-Crop Wheat Futures at Chicago since 1885," *WHEAT STUDIES*, February 1934, X, 183-228.

² For example, during January-May 1937 prices of near futures at Liverpool were generally under the price of the July, yet Canadian and Indian parcels for near shipment were quoted at substantial premiums over May-June shipments. See "World Wheat Survey and Outlook," *WHEAT STUDIES*, May 1937, XIII, pp. 389, 391-92.

not prove significantly different from what was anticipated when the contract was made.

The representativeness of the futures contract was improved with introduction of the "American Red" future in 1891. No. 2 Spring and No. 2 Winter wheat from the United States and Canada east of the Rockies were made the basis of this contract. Imports of red wheat from the United States had been averaging about twice as much as imports of Californian wheat; and the total imports of red wheats, including those from Russia, Canada, and Argentina, similarly exceeded the total imports of white wheats, including those from India, Chile, and Australia. Further improvement was made in 1903 with introduction of provisions for tender of wheats of differing qualities at prices differing from the contract price according to grade. This made possible a closer standardization of the basis of the contract without unduly restricting the quantity of wheat tenderable on contracts. Another improvement made at the same time was inclusion of Argentine as well as North American red wheats among the deliverable types.

The contract providing for tender of different grades of wheat at prices other than the contract price was distinguished as a "graded wheat contract." Application of this term does not imply that the previous contract permitted tender of any American red wheat without regard to grade (quality), but only that the new contract gave a new significance to grading. As first introduced in 1903, the graded wheat contract took as its basis "the highest grade of wheat," designated as "Grade A." We distinguish this as the "Grade A Contract," although in fact the price quoted was almost always a price for a lower grade plus a fixed difference, rather than actually a price for Grade A wheat.

After nearly four years of experience with the graded wheat contract, it was refined in the direction of increased flexibility by eliminating the special grade designations and providing a finer set of allowances for quality. At the same time (December 1906) the "basis" of the contract was lowered, with the effect that prices on the new contract, when it was first introduced, tended to be about 2-5

pence lower (depending on circumstances) than they would have been under the old contracts. The quality required for tender was apparently not lowered, but the system of allowances on tenders was so changed that the quoted prices tended to reflect the price of the average quality of wheat actually tendered rather than to be that price plus an allowance for inferiority below the "highest quality."

Changes in the Liverpool futures contract after 1907 were of minor significance. In 1910 Australian wheat was added to the tenderable varieties, and after the war the maximum allowance for superior quality was increased from 1*d.* per cental to 3*d.* per cental. Each of these changes increased the potential representativeness of the futures price without significantly altering the level of the price at the time. Australian wheat was admitted to tender before need for its inclusion became pressing. The increase in maximum allowance for superiority to 3*d.* per cental did not represent a depreciation in the basis of the contract, but constituted an adaptation to the newly developed prevalence of wide market differentials according to quality.

Certain temporary changes affecting the futures contract occurred when duties were imposed on British wheat imports in 1902 and 1932 and removed in 1903 and 1938. On imposition of a duty, contracts made earlier became subject to payment by the buyer of the amount of the duty in addition to the contract price. On removal of a duty, contracts made earlier became subject to deduction of the amount of the duty from the contract price. Following such changes, prices on "new terms" contracts, not subject to addition to or deduction from the contract price, better represented actual prices than did the quotations on "old terms" contracts.

RELATION OF FUTURES TO OTHER REPRESENTATIVE PRICES

Of the several price series which may lay claim to consideration as in high degree representative of British prices on imported wheat, none is clearly ideal. Each is subject to certain peculiarities noted above. The extent to which these peculiarities affect each of the

several series may be inferred from comparisons among them. It may be taken for granted that prices of futures are superior to other prices as indicators of price change over short periods. For present purposes we concern ourselves only with such comparisons as may be made between the several series on a monthly basis.¹ Indeed the text of the present study, although designed primarily to provide a basis for interpretation of the weekly record of Liverpool futures prices presented in accompanying tables and charts, includes no specific discussion of the weekly data.

For such comparisons, three representative price series are shown in Charts 1 and 2, in terms of monthly averages through the years from 1887 to 1938. The series shown are the average customs price on all wheat imported into the United Kingdom, Broomhall's series for spot prices of "good red wheat," and prices of the near future at Liverpool.² To indicate the extent of the discontinuity involved in shifting from one future to another, price curves for successive futures are overlapped two months wherever possible. Usually the last average shown for a future is for the delivery month, but not infrequently quotations have ceased several days before the end of the month and the last average shown is for the month before expiration of the future. All the prices are plotted in terms of shillings per cental. Inset scales have been added in Chart 1, however, on which the prices may be read in cents per bushel at times when the dollar-sterling exchange rate

¹ For comparisons of weekly average prices of futures with weekly parcels prices, August 1922-June 1928, see M. K. Bennett, *op. cit.*, p. 294. In some later years the parcels-price series has been more erratic in week-to-week movements than during 1922-1928, and at times its level seems to have been more affected by peculiarities of weighting than in this earlier period. It has nevertheless remained a very useful price series, being never so far removed from a spot price as the nearest future sometimes is, and not dependent on the uncertainties of personal judgment involved in selecting presumably representative spot prices.

² Until 1897 futures were quoted for delivery in each month of the year, but we show in Chart 1 and in the appendix tables only prices for the five deliveries now customarily traded, and we treat the nearest one of these five as the "near" future.

³ At the former par of exchange (\$4.8665 per pound sterling), 1 shilling per cental is equivalent to 24½ cents per 100 pounds or 14.60 cents per bushel.

was close to par.³ For the purpose of reading from the chart these scales may be regarded as accurate except after August 1919. Such scales are not included on Chart 2, since their use would give measurably inaccurate results, and sometimes grossly inaccurate results, in 1920-1924 and during most of the time since August 1931.

The British parcels prices, which have been compiled only from 1921, are not here shown because addition of a fourth series would unduly confuse the chart, and the advantage to be gained for present purposes does not warrant inclusion of an additional chart for the postwar period. From the standpoint of comparisons of level, the customs price is more reliably representative of the average price of British imported wheat, if due allowance be made for its tendency to lag.

Inevitable disparities. — Some disparities between prices of even the near future and prices of spot wheat are inherent in the nature of the futures price. In January the near future at Liverpool is that for March, two months distant. When supplies are pressing, the spot price of the cheapest tenderable wheat in January may be a few pence per cental under the price of the March future. Similar discounts of spot wheat under the near future may appear in any month of the year other than a delivery month. When supplies of spot wheat are scarce, the price of the cheapest tenderable spot wheat in January may be several pence per cental over the price of the March future. Large premiums of spot wheat over the near future are rarely observed except with reference to either the March or the October (or September) future.

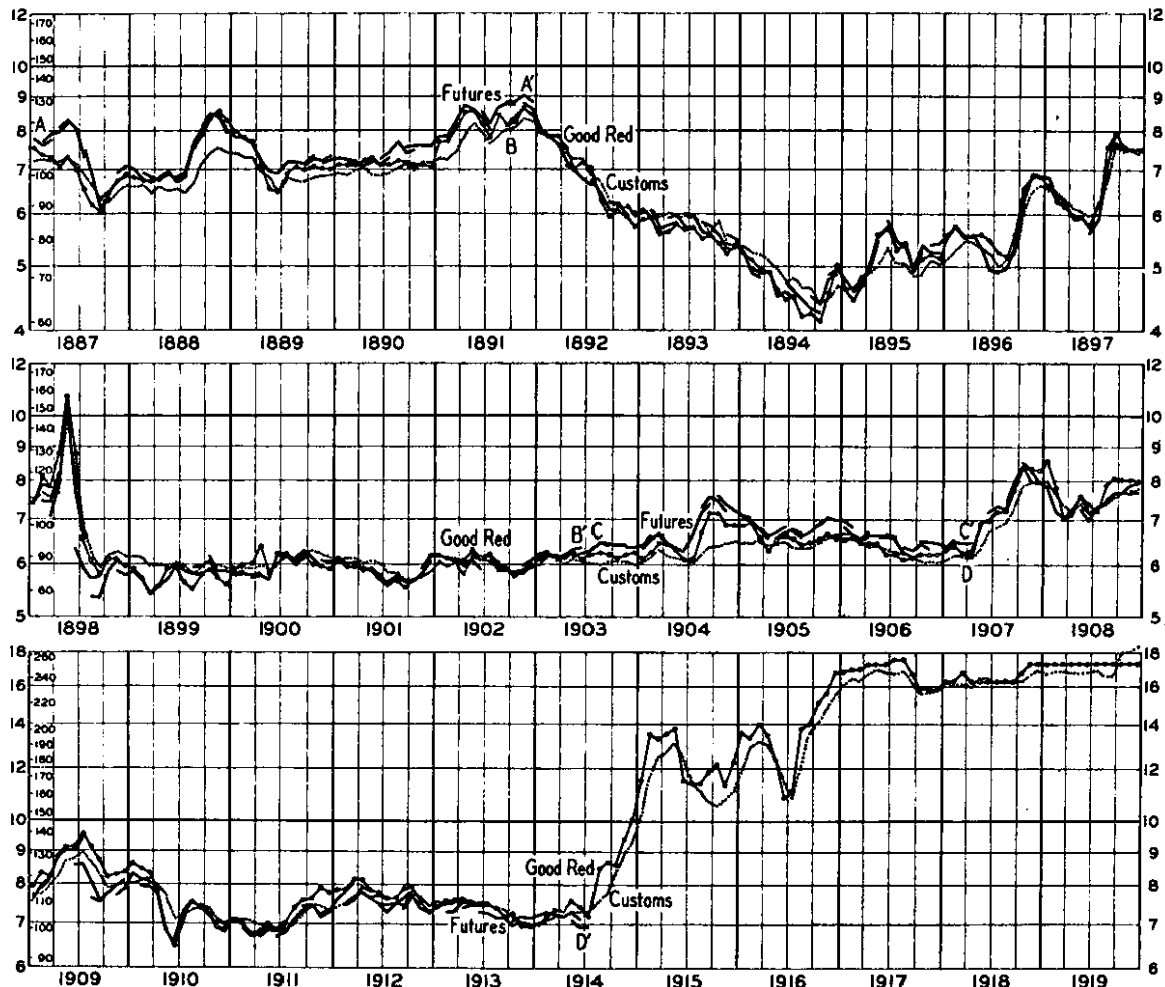
The spot price series ("good red wheat") shown in Charts 1 and 2 represents a wheat other than that contemplated for delivery too often to make it entirely satisfactory as a basis for detailed discussion of relations between spot and futures prices at Liverpool, and we attempt no such detailed discussion here. Nevertheless the spot price series, and the spreads between successive futures where they overlap, together give a usually reliable indication of the extent to which disparities between the futures and the other two price series may be attributed to characteristics

associated with the "futura" of the futures price. In August and September 1926, for example (Chart 2), it is clear enough that the price of the October future was below the spot price owing to expectation of easing of the

this instance the price of "good red wheat" seems an unsatisfactory basis of comparison, for it was several pence per cental above the price of the 1926 December future in the delivery month. In the succeeding discussion

CHART 1.—LIVERPOOL NEAR FUTURES, "GOOD RED WHEAT" (SPOT), AND BRITISH CUSTOMS PRICES, MONTHLY, 1887-1919*

(Shillings per cental)*



* Futures prices from Table I: A-A', Californian wheat future; B-B', American Red; C-C', Graded Red, basis Grade A; D-D', Graded Red, new contract. Prices of "good red wheat" from *Broomhall's Corn Trade Yearbook*, 1904, 1921, and 1937. Customs prices, from *Accounts and Papers Relating to the Trade and Navigation of the United Kingdom*: declared values of all imported wheat divided by quantities imported.

* An inset scale has been added, reading in cents per bushel. This scale is accurate only for periods when the dollar-sterling exchange rate was at par, but for the purposes of reading from the chart it may be regarded as accurate except after August 1919.

supply situation by October. The price of "good red wheat" seems a fair representation of the spot price properly to be related to the future in these months. In January and February 1927 also, it seems clear that the price of the March future reflected an anticipated easing of the supply position. But in

of disparities between the prices of futures and of the other price series, attention is devoted only to disparities other than those attributable to the futurity of the futures prices.

The element of futurity in futures prices at Liverpool is not often a source of large price disparities. Only rarely are the price differ-

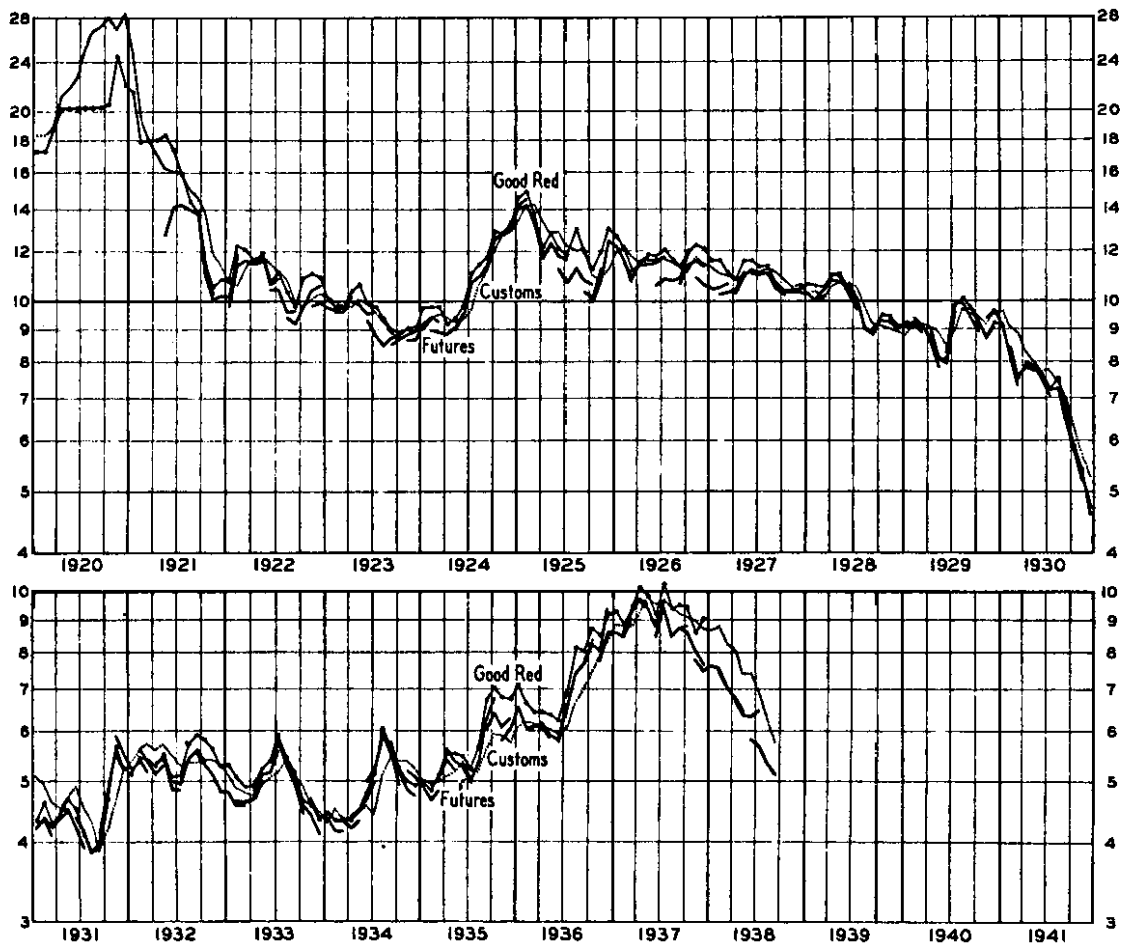
ences between successive futures as large as the differences that often occur between the customs price and the price of "good red wheat," or between the price of a future in a delivery month and the concurrent spot price of "good red wheat." Commonly, the price

ford a satisfactorily representative price, then the price of the near future is usually a quite acceptable substitute in the absence of such an ideal spot price.

Persistent disparities in level.—During two periods the basis of futures prices has been

CHART 2.—LIVERPOOL NEAR FUTURES, "GOOD RED WHEAT" (SPOT), AND BRITISH CUSTOMS PRICES, MONTHLY, 1920-1938*

(Shillings per cental)



* Sources as for Chart 1, except that prices here shown for the March 1933 future are on the duty-paid basis (see Table IV), whereas Table I gives the March future only on the duty-free basis.

of the near future at Liverpool has been within one or two pence per cental of a corresponding spot price. The inevitable margin of error in any attempt to arrive at a broadly representative price of British imported wheat is much larger than this. If it be accepted that the spot price of wheat contemplated for tender on the future (with adjustment for any allowance to buyer or seller on tender) would af-

such that they tended to be above a representative level. When Californian wheat was the basis of the Liverpool future (1887-1891 in Chart 1) the price of the near future was generally above the average price for all imported wheat, sometimes by as much as 1s. per cental (14.6 cents per bushel) but more commonly by only about half that amount. During about half of this period, Broomhall's

series for spot prices of "good red wheat" was at about the same level as the futures.¹

From August 1903 to April 1907 the prices of the futures were above a representative level because their nominal basis was a superior quality of wheat (Grade A). Effectively, the price of the future during this period was the price of a lower grade plus a fixed difference. The effect was to maintain the price of the future at roughly 3-4*d.* per cental (about 3.6-4.8 cents per bushel) above what may be regarded as a representative level. The price of "good red wheat" appears to have been fairly representative during most of this period. The disparity between that series and the customs price in 1904-05 will be discussed below.

Both the futures and the spot prices departed significantly from the customs price at times during 1893-1896 and 1899. Differences apparently not attributable merely to lag in the customs prices occasionally reached 3-4*d.* per cental (roughly, 4 cents per bushel). Differences only occasionally and temporarily reaching this amount as a maximum are unimportant from the standpoint of appraising the level of wheat prices; but at times—notably in 1899—they result in significant differences in the indicated course of prices. They seem to arise primarily from the facts that during these years only North American wheat grown east of the Rockies was tenderable on the future, and that the quality of the wheat tenderable was not well standardized.

After introduction of the graded wheat future in 1903, and especially after revision of the graded wheat contract in 1907 (discussed in Section III below), the price of the Liverpool future became more uniformly representative of prices of British imported wheat. In the summer of 1904, however, a peculiar situation developed. Prices of most wheats advanced under the influence of crop damage in the United States, but prices of Indian wheat remained low. During August-October 1904 nearly one-third of British imports were of Indian wheat. The price of "good red wheat" seems representative of prices of

wheat other than Indian during the latter half of 1904, but the customs price, heavily weighted by cheap Indian wheat, was considerably lower. Significant price disparities again appeared in the latter half of 1909, most clearly evident in September when the price of the expiring future averaged more than 13*d.* per cental under that of "good red wheat." The price of the future at this time was based on United States hard winter wheat while the "good red wheat" price appears to represent either soft red winter or Argentine wheat, currently much higher in price. By comparison with the customs price, with allowance for its tendency to lag, the futures price appears reasonably representative.

During postwar years, the recorded price of "good red wheat" has on several occasions been 4-6*d.* per cental or more above the price of the future in a delivery month. Such disparities may often be explained in considerable part by the fact that the spot price applies to a quality of wheat tenderable on the future at a premium of as much as 3*d.* per cental.

Disparities between the customs price and prices of futures that lead to questioning the representativeness of the future appear chiefly since 1930, and usually with the customs price above the futures. When Canadian wheats command large premiums over other wheats, the weighted average price of all imported wheat tends to be above the price of other representative milling wheats. In such instances each price has special merits. The futures price tends to be representative in the modal sense; the customs price, in the sense that an arithmetic mean is representative.

INFLUENCE IN PRICE DETERMINATION

The position of the United Kingdom in the world wheat trade and the intimate connection of Liverpool futures prices with the world-wide influences that center in the British wheat market give the Liverpool futures market a unique importance. As an indicator of the price significance of developments in the world wheat situation, Liverpool ranks ahead of any other futures market. Futures markets, however, serve not only to reflect influences originating outside them, but also to

¹ The Broomhall series is described as representing "No. 2 American Spring" wheat during 1887 and 1888, and "American Winter" during 1889-1891. *Corn Trade Year Book, 1904.*

provide a means by which traders, through their buying and selling, influence prices there and elsewhere.

The distinction between these two functions of a futures market is an elusive one, difficult to express clearly; but the existence of such a distinction is apparent if one compares two such futures markets as the Chicago Board of Trade and the Chicago Open Board. Prices on the Open Board reflect essentially the same influences as those on the "Big Board"—the prices are substantially identical. But as an influence in the determination of wheat prices, the Chicago Open Board is relatively unimportant. In the following paragraphs we shift our attention from matters relating to the significance of Liverpool futures prices as an index of world wheat prices to matters relating to the significance of the Liverpool futures market as an active agency in the determination of world wheat prices.

In terms of volume of trading, the Liverpool wheat futures market ranks relatively low. In 1930 the volume at Liverpool and at the several North American markets compared as follows, in million bushels and in percentages of the volume at Liverpool:¹

	Million bushels	Percentage
Chicago	12,449	1,897
Winnipeg .....	...	1,050
Minneapolis	891	136
Kansas City	693	106
Liverpool	656	100
Duluth	272	41

Comparison of the volume of trading at Liverpool with that at Chicago year by year since the war reveals some interesting tendencies that do not appear clearly in the Liverpool statistics by themselves. These appear to advantage when total annual sales of Liverpool wheat futures are expressed as percentages of the annual totals for Chicago, as follows:²

Year	Percentage	Year	Percentage
1922	1.6	1930	5.3
1923	1.8	1931	6.6
1924	2.6	1932	4.2
1925	2.4	1933	3.6
1926	2.6	1934	9.3
1927	3.8	1935	8.9
1928	4.3	1936	6.9
1929	4.4	1937	5.2

Between 1922 and 1928 the volume of trading at Liverpool increased with striking uniformity from only 1.6 per cent of that at Chicago to 4.3 per cent. Since then it has varied between 3.6 per cent and 9.3 per cent, but in such a way as to suggest that perhaps there has been a definite tendency for the volume of trading at Liverpool to be about 4-5 per cent of that at Chicago. The volume at Liverpool has risen markedly above 5 per cent of that at Chicago only in years in which Chicago prices were far out of line with international markets (1931 and 1934-36). Under such circumstances, wheat in international trade that ordinarily might be hedged in Chicago tends instead to be hedged in Liverpool.³

Comparisons of volume of trading tend to make the Liverpool futures market appear

¹ Data, for Liverpool, from *Corn Trade News*, Jan. 3, 1934, p. 3; for United States markets, from *Wheat Futures* (U.S. Department of Agriculture Statistical Bulletin No. 54), January 1937, p. 13; for Winnipeg, from *Report of the Commission to Enquire into Trading in Grain Futures* (Ottawa, 1931), p. 49.

For Winnipeg the available data cover the period May 1, 1929—March 31, 1931, during which the volume of trading at Winnipeg was 13,647 million bushels, at Liverpool, 1,299 million bushels. The percentage shown above for Winnipeg is based on these figures.

² No precise record is kept of the volume of trading at Liverpool, but the *Corn Trade News* publishes daily an estimate of the volume of transactions. From time to time, tables of monthly and of annual volume of trading are published, based on these estimates. For postwar years the annual totals (from the *Corn Trade News*, Jan. 3, 1934 and Jan. 6, 1937) are as follows, in thousand 480-lb. quarters (loads):

Year	Loads	Year	Loads	Year	Loads	Year	Loads
1921..	5,760	1925..	53,080	1929..	86,390	1933..	46,850
1922..	22,355	1926..	42,760	1930..	82,050	1934..	87,480
1923..	19,180	1927..	42,945	1931..	57,290	1935..	78,855
1924..	31,580	1928..	47,920	1932..	42,550	1936..	63,680

For 1937 we obtain a total of 70,700 thousand quarters by summation of the daily estimates as published in the *London Grain, Seed and Oil Reporter*.

Corresponding data for prewar years appear on p. 144 below.

³ Chicago has two advantages which tend to attract hedging business that on other grounds might be expected to go to Liverpool: (1) a greater volume of business, which permits large hedging orders to be placed with less likelihood that they will adversely influence the price; and (2) a lower brokerage rate. At Liverpool brokerage charges are $\frac{1}{2}$ d. per cental for nonmembers and $\frac{1}{4}$ d. for members (when the broker handles the transaction as for a nonmember), equivalent to about .6 and .3 cents per bushel respectively. At Chicago the corresponding rates are $\frac{1}{4}$ and $\frac{1}{2}$ cents per bushel—slightly less than half of the Liverpool rates.

less important than it is in fact, especially by comparison with Chicago and Winnipeg, where there is so much more in-and-out trading (see pp. 139-40). From the standpoint of influence in price determination, the relative importance of different futures markets is better indicated by the volume of open commitments in wheat futures.¹ Statistics of open contracts at Liverpool are not regularly published, but a special compilation prepared by the Liverpool Corn Trade Association from records of the clearinghouse permits us to give statistics that are representative of the course and level of open contracts at Liverpool during 1931-1937. The data, given in the tabulation on the opposite page, show the volume of open contracts (between members) registered with the clearinghouse, in each delivery month and in total, daily through one week at about the middle of May and of November of each year.

In comparisons of these statistics of open contracts at Liverpool with statistics for markets in the United States, a large allowance

¹ Perhaps the influence of a futures market in price determination would be reflected most accurately by the net volume of hedges carried by speculators in the market. The Commodity Exchange Administration publishes data on open contracts of large-scale hedgers at Chicago which might be used to advantage for such a comparison, but no corresponding figures are available for Liverpool.

² The terms "open contracts" and "open commitments" are often used synonymously. A technical distinction may be made between the commitment of a client who places an order with a broker and the contract which the broker makes, as a member of the exchange, in carrying out the instructions of his client. In these paragraphs we use the term "commitment" to cover the obligations of individuals acting for their own account, whether through brokers or directly as members, and employ the term "contract" only in the narrower sense of contracts between members of the exchange, whether made for their own accounts or for clients.

³ The fact that open commitments at Minneapolis, as shown here, averaged one-fourth less than open contracts at Kansas City whereas volume of trading at Minneapolis, as shown in an earlier tabulation, averaged over one-fourth larger than volume of trading at Kansas City, is attributable almost wholly to differences in the years for which the comparisons are made. With sharply decreased supplies of wheat in the Northwest, both volume of trading and open commitments at Minneapolis since 1930 have averaged about three-fourths of the corresponding figures for Kansas City, whereas in 1930 and earlier years they were 30-70 per cent larger than for Kansas City.

must be made for a difference in basis of the statistics, to be discussed more fully below. The records for markets in the United States are mainly on a basis of open commitments² of individual traders. Data for Liverpool on the same basis might show open commitments about twice as large as the volume of contracts open on the records of the clearinghouse.

Comparison of Liverpool open contracts on about the 15th of May and November of each year, as shown by the available statistics, with the average daily open commitments reported at Chicago for the same months shows the following percentages of Liverpool to Chicago:

Year	May	Nov.	Average*
1931	12.5	11.3	11.8
1932	9.8	4.1	6.6
1933	8.5	8.4	8.5
1934	26.7	21.2	23.4
1935	33.5	11.1	19.1
1936	13.4	12.9	13.1
1937	17.7	12.8	15.0

* Weighted average, obtained by combining the totals for May and November and calculating their ratio.

The volume of recorded open contracts at Liverpool has tended to be comparatively large relative to the volume of open commitments at Chicago in the same years that the volume of trading at Liverpool was comparatively large (as shown by the second tabulation on p. 131). The relations representative of normal circumstances during recent years are perhaps best represented by averages for the three years, 1931-1933. During these years the volume of trading at Liverpool averaged 4.8 per cent of that at Chicago while the open contracts recorded for Liverpool averaged 9.0 per cent of those for Chicago. Including Minneapolis and Kansas City in the comparison, and taking Liverpool as the base for percentages, the average volume of open contracts during 1931-33 compare as follows:³

	Million bushels	Percentage
Chicago	386.9	1,140
Minneapolis	55.8	164
Kansas City	73.6	217
Liverpool	34.0	100

An attempt to draw valid conclusions from the foregoing percentage relations, based on data that are not all directly comparable, re- conclusions, however, may be stated briefly: In terms of volume of open contracts in those years of the last decade in which exceptional

OPEN CONTRACTS IN LIVERPOOL WHEAT FUTURES*

(Thousand quarters)

	Mar.	May	July	Oct.	Dec.	Total		Mar.	May	July	Oct.	Dec.	Total
1931							1934						
May 11.....	...	340	696	384	...	1,420	Nov. 19.....	1,499	715	...	...	1,291	3,505
12.....	...	330	701	407	...	1,438	20.....	1,499	717	...	...	1,280	3,496
13.....	...	331	710	428	...	1,469	21.....	1,504	720	...	...	1,275	3,499
14.....	...	333	711	436	...	1,480	22.....	1,505	738	...	...	1,272	3,515
15.....	...	308	696	471	...	1,475	23.....	1,555	739	...	...	1,248	3,542
16.....	...	278	683	502	...	1,463	24.....	1,579	739	...	...	1,239	3,557
Nov. 16.....	747	486	...	...	565	1,798	1935						
17.....	758	491	...	...	582	1,831	May 13.....	...	93	1,420	1,038	441	2,992
18.....	769	519	...	...	585	1,873	14.....	...	78	1,464	1,064	455	3,061
19.....	773	533	...	...	578	1,884	15.....	...	36	1,456	1,060	454	3,006
20.....	769	555	...	...	578	1,902	16.....	...	27	1,450	1,046	456	2,979
21.....	800	568	...	...	522	1,890	17.....	...	31	1,445	1,030	463	2,969
							18.....	...	24	1,418	1,048	474	2,964
1932							Nov. 18.....	861	365	...	...	557	1,783
May 17.....	...	29	770	541	27	1,367	19.....	855	380	...	...	559	1,794
18.....	...	25	775	547	31	1,378	20.....	855	385	...	...	565	1,805
19.....	...	26	775	547	31	1,379	21.....	866	371	...	...	541	1,778
20.....	...	22	748	549	31	1,350	22.....	859	400	...	...	560	1,819
21.....	...	22	732	547	31	1,332	23.....	893	408	...	...	563	1,864
Nov. 14.....	509	...	...	...	285	794	1936						
15.....	506	...	...	...	282	788	May 11.....	...	308	481	500	...	1,289
16.....	504	...	...	...	281	785	12.....	...	276	486	501	...	1,263
17.....	524	...	...	...	280	804	13.....	...	273	479	507	...	1,259
18.....	521	29	31*	...	267	848	14.....	...	283	489	502	...	1,274
19.....	492	42	49*	...	267	850	15.....	...	277	487	498	...	1,262
							16.....	...	275	520	544	...	1,339
1933							Nov. 16.....	890	127	...	...	608	1,625
May 15.....	...	69	544	897	76	1,586	17.....	906	126	...	...	587	1,619
16.....	...	49	531	900	75	1,555	18.....	914	122	...	...	583	1,619
17.....	...	44	528	898	78	1,548	19.....	936	142	...	...	607	1,685
18.....	...	44	532	907	94	1,577	20.....	945	152	...	...	617	1,714
19.....	...	33	531	935	96	1,595	21.....	939	151	...	...	621	1,711
20.....	...	33	525	935	98	1,591	1937						
Nov. 13.....	527	227	...	...	745	1,499	May 10.....	...	182	1,377	535	...	2,094
14.....	493	234	...	...	748	1,475	11.....	...	181	1,380	543	...	2,104
15.....	487	240	...	...	752	1,479	13.....	...	181	1,294	553	...	2,028
16.....	484	251	...	...	742	1,477	14.....	...	179	1,246	580	...	2,005
17.....	457	271	...	...	731	1,459	Nov. 15.....	656	435	...	...	586	1,677
18.....	455	280	...	...	731	1,466	16.....	661	459	...	...	583	1,703
							17.....	615	470	...	...	534	1,619
1934							18.....	671	487	...	...	545	1,703
May 14.....	...	77	1,219	1,265	527	3,088	19.....	648	517	...	...	548	1,713
15.....	...	39	1,197	1,263	547	3,046	20.....	646	515	...	...	550	1,711
16.....	...	8	1,200	1,255	561	3,024							
17.....	...	8	1,206	1,259	563	3,036							
18.....	...	8	1,165	1,250	570	2,993							

* Data especially compiled by Liverpool Corn Trade Association from clearinghouse records of contracts registered. Dates apparently are those of registration; therefore contracts shown are those in force at the end of the previous business day.

* "New" March future, duty paid by sellers.

quires consideration of several rather technical problems. Additional complexities are encountered in undertaking to bring data for Winnipeg into the comparison. The main

circumstances have been least important, the Liverpool futures market has perhaps ranked about on a par with Minneapolis and Kansas City. Chicago has had a volume of open con-

tracts perhaps five times as large as that at Liverpool, and Winnipeg a volume perhaps four times as large.

In interpreting these estimates as rough indications of relative influence of the several futures markets in the determination of world wheat prices, certain qualifications must be borne in mind: (1) the comparison, strictly, is not one of importance of markets, but of importance of the bodies of traders making use of the respective markets; (2) the comparison concerns only the influence of traders through their holdings of futures contracts; and (3) when a country is neither exporting nor importing substantial quantities of wheat, markets in that country may have little power to affect prices elsewhere.

The statistics of open contracts at Liverpool, as noted above, cover only the contracts open between members. They do not necessarily include all of those (see p. 141). The contracts open in any one option for a broker member, however, tend to represent only the *net* position of his clients in that option. For example, if his books show open long commitments by clients aggregating 100 loads in the March option, and open short commitments by clients aggregating 60 loads in the same option, the broker may appear on the records of the clearinghouse only as long 40 loads in the March option. Instances occur in which a broker who has a net long position in one option will appear as having open short contracts also in that option, but in general the records of the clearinghouse tend to show only the net position of a broker in any one option.¹

The statistics of open commitments at futures markets in the United States, on the other hand, include for most brokers the total open commitments of clients, rather than merely the net open commitments with each broker in any one option. Clearing members in exchanges in the United States report to the Commodity Exchange Administration the open commitments in all accounts carried with them. Among these accounts are some for non-clearing brokers, and each of these shows only the net position of the clients of the non-clearing brokerage firm. But the amount of business done by these non-clearing brokers is relatively small. Thus the statistics of open commitments at United States markets come much closer to recording the total of all open commitments of individual traders than do the available statistics for Liverpool. We have suggested above that if statistics of open commitments at Liverpool were available on the same basis as those for markets in the United States they might be about twice as large as the statistics we have. Making

such an allowance, we judge that, under normal conditions since about 1927, the volume of open commitments of individual traders at Liverpool may have been about equal to the volume at Minneapolis or Kansas City, and about one-fifth of the volume at Chicago.

For comparisons with Winnipeg four figures are available—one on about the same basis as the Liverpool statistics, the others on about the same basis as the statistics for markets in the United States. From May 1929 through March 1931, open contracts recorded with the clearinghouse at Winnipeg averaged 53.4 million bushels.² Average open contracts at Liverpool during the same period may be estimated at about 19.5 million bushels,³ or about 37 per cent of the open contracts at Winnipeg.

For three later dates, statistics of open commitments at Winnipeg are available on a basis comparable with those at Chicago, as follows:⁴

Date	Bushels
October 1, 1934.....	279,007,000
June 14, 1935.....	184,166,000
December 2, 1935.....	184,591,000

At the most nearly corresponding dates, the recorded open contracts at Liverpool were 7.6–13

¹The statistics of open contracts which we give herewith are the number of "strings" registered with the clearinghouse (see discussion in the next section of the method of clearing). Each string is composed of a series of contracts for one load each. Only the contracts at the ends of a string are regarded as open. Under the conditions assumed above, supposing the purchases of 100 loads made for clients and the sales of 60 loads all to have been registered with the clearinghouse, the broker would appear as "first buyer" on 40 strings and as an intermediary (having both bought and sold) in 60 positions on these and other strings. If on registering sales of 5 loads, however, he had omitted to instruct that they be entered on strings, he might appear as first buyer on 45 strings and as first seller on 5 strings. In this event, the clearinghouse record would show somewhat more than the net position of the broker's clients.

²See p. 139, footnote 2.

³In May and November of the years 1931–37, monthly trading at Liverpool averaged 2.9 times the volume of open contracts. From May 1929 through March 1931 trading at Liverpool averaged 56.5 million bushels monthly. Dividing 56.5 by 2.9, we obtain the above estimate.

⁴Data from Secretary of the Winnipeg Grain Exchange, compiled for the Turgeon Commission. It is noteworthy that these figures average four times as large as the average of contracts recorded at the clearinghouse from May 1929 through March 1931. Statistics of open contracts at Winnipeg on comparable bases would undoubtedly show an increase between this earlier period and the later dates, but we infer that for Winnipeg individual open commitments tend to average at least twice as much as open contracts recorded with the clearinghouse.

per cent of these figures. If the volume of individual open commitments at Liverpool was double the volume of contracts open at the clear-

inghouse, the Liverpool open commitments were about 15-26 per cent of the above figures for Winnipeg.

II. OPERATION OF THE FUTURES MARKET

From the standpoint of interpretation of prices, three classes of circumstances associated with transactions in futures are of particular interest: (1) regulations and customs governing trading and registration of prices; (2) regulations and customs determining the nature of the contract; and (3) the classes of traders present or represented on the market. These are the principal subjects of the present section. Some additional technical details associated with the registration and clearing of contracts are of sufficient interest to warrant inclusion also.

FUTURES TRADING AND QUOTATIONS

A definition of futures trading must be sharply drawn to apply without ambiguity in the British grain trade. Most of the wheat imported into the United Kingdom is purchased on contracts which call for delivery at a time considerably after the date of making of the contract. Two types of such contracts,¹ which are technically not futures, are nevertheless used to some extent for speculation and hedging and are subject to registration and clearing through the clearinghouse of the Liverpool Corn Trade Association under regulations similar to and in part identical with those applying to "contracts for future delivery." Futures contracts are distinguished under the rule:

"Goods sold for future delivery" means wheat or maize sold under a Contract which is subject to registration at the Clearing House and to calls for margins and is for delivery within one specified month, wheat to be tendered in store approved by the Association and maize to be tendered either in store or ex quay.²

In this definition, the provision that the contract be subject to registration at the clearing-

¹ C. F. & I. or "parcels" contracts and "shipment and delivery" contracts. The "S. and D." contracts extensively used before the war, but much less since, are restricted to use in connection with East Indian wheat.

² *Bye-Laws of the Liverpool Corn Trade Association, Limited*, 1929, p. 1.

house serves to include in the definition certain regulations stated elsewhere, notably the requirement that the delivery month specified shall be one approved by the clearinghouse committee. The critical distinguishing features of the definition are that delivery be called for within one specified month and, as regards wheat, in approved storage.

Trading in wheat futures is characterized by the openness of the transactions. In all other divisions of the trade, transactions are to a large extent private, and available quotations may be slightly out of line with prices at which much of the business is being done.

Trading in futures is rigidly limited to specified hours and regular business days, whereas other business is not so restricted. Prices on futures transactions are recorded on a board in the exchange room at the opening of the trading session, and on each subsequent reported transaction which is at a price different from that last recorded.

The hours of trading are now generally 10:30 A.M. to 4:15 P.M. except on Saturdays and occasionally on other days preceding holidays, when trading terminates at 12:15 P.M. The closing hour is partially determined by the advantage of giving opportunity for trading after the opening of North American futures markets, at 3:30 P.M. Liverpool time. When use of "daylight-saving" time begins in the United States before it does in Liverpool, or ends later, the opening of North American futures markets occurs for a week or two at 4:30 P.M. Liverpool time. Hours of trading at Liverpool are then extended usually until 4:45 P.M.

Quotations are in shillings and pence per cental (100 pounds). The smallest fraction that may be used in designating the price is one-eighth of a penny per cental. Arrangements are made for transmitting prices by wire to other markets, and the full list of recorded prices is regularly published in *Broomhall's Corn Trade News*. Trading is in units of 4,800 centals, equal to 1,000 quarters or

8,000 bushels. This unit is commonly termed a "load" and is identical with the conventional "boatload" as that term is used on the Atlantic Coast of North America.¹

THE FUTURES CONTRACT

The meaning of a futures price is dependent upon provisions of the futures contract that determine what quality and description of wheat will be delivered on it, if tender is made, and the circumstances of tender. These features are determined by rules and regulations of the exchange and by customs which serve to interpret and supplement the formal regulations. The contract form used at Liverpool, unlike those in use in wheat markets in the United States, specifies the terms of the contract in considerable detail. A reproduction of the contract form appears on p. 152.

The only wheats tenderable on Liverpool futures contracts are red wheats (hard or soft, winter or spring) from the United States and Canada, Argentine wheats, and Australian

¹ See V. D. Wickizer, "Shipping and Freight Rates in the Overseas Grain Trade," *WHEAT STUDIES*, October 1938, XV, 82. Note, however, that the statement there that "orders from foreign buyers usually specify the quantity of grain in multiples of 1,000 tons" should read "1,000 quarters," continuing a statement begun in the preceding sentence.

² Weights per bushel as determined at Liverpool are not directly comparable with weight requirements for American grades. The imperial bushel is a measure of capacity 3.22 per cent larger than the Winchester bushel, which is in use in the United States. Furthermore, determination of the natural or test weight is by different methods. The Boerner weighing apparatus, which is official for use in the United States, gives weights about 2 lbs. per bushel higher than those obtained on the McQuirk apparatus, used at Liverpool. Canada uses the Boerner weighing apparatus, but it uses the imperial bushel. The result is that wheat showing a test weight of 60 lbs. per bushel according to Liverpool standards would be credited in Canada with a weight of about 58 lbs. per bushel, and in the United States, with a weight of only about 56 lbs. (See E. A. Fisher and C. R. Jones, *The Wheats of Commerce*, National Joint Industrial Council for the Flour Milling Industry, Technical Education Series Pamphlet No. 10, August 1937, pp. 58, 76; and S. J. Duly, *Grain*, London, 1928, p. 60.)

These differences have no bearing on comparisons of price quotations or of recorded quantities expressed in bushels, since trade in wheat is conducted in terms of a conventional bushel defined as 60 lbs. of wheat. A quarter, as used in the wheat trade, is similarly not a unit of volume but of weight, the quarter, as defined in connection with the British import trade, being 480 lbs.

wheats. The most important requirements as to quality are that the wheat tendered shall be "in fair merchantable condition" and suitable for "general milling purposes." This last proviso serves, for example, to exclude durum wheat. "Basis weights" per bushel are specified for the various wheats, and tenders are limited to wheats weighing not more than 1 pound per imperial bushel less than the basis;² but in general the grading requirements are not specific and detailed. Grading is dependent in large part on the judgment of the grading committee.

Wheats judged by the grading committee to be better or poorer than the accepted standard, within certain limits, may be passed for tender subject to a price allowance to either buyer or seller, determined by the committee's judgment of the value of the wheat. The maximum premium (allowance to the seller) permitted is 3 pence per cental, while wheat judged to deserve a discount of more than 1 penny per cental may not be passed for tender. Within the range from a discount of 1 penny per cental to a premium of 3 pence, allowances may vary only in steps of $\frac{1}{2}$ penny per cental. It is not considered feasible to judge quality more closely than to the nearest half-penny per cental.

The absence of detailed specifications as a basis for grading makes especially important a high order of competence on the part of the graders, and provisions for continuity of grading practice and avoidance of favoritism. The responsibilities of grading are not delegated to employees, but are assumed by the members of the Corn Trade Association themselves. Members of the grading committee, fifteen in number, are elected by the Directors of the Association, serve for eighteen months, and retire by rotation, five every six months. The actual grading is done by subcommittees of five, no one of whom may have an interest in the grain to be graded.

There is no public regulation of grading at Liverpool such as is general in North America. Public regulation tends to arise from existence of a large group having substantial interest in grading practices, but lacking representation in the administration of private grading. Suspicion may then arise that privately adminis-

tered grading is manipulated contrary to the interests of such a group. Such suspicion has not always lacked foundation. But, at Liverpool, all groups in the United Kingdom with a substantial interest in grading practices are represented in the Corn Trade Association.

Since the provisions for allowances are not associated with rigidly defined characteristics of the wheat, the allowances may be adjusted in part to actual market values. Wheats within a considerable range of quality variation may all be economically tenderable on Liverpool futures at a given time. By contrast, the rigid provisions for determining premiums or discounts in use in North American markets usually result there in a very sharp limitation of the qualities economically tenderable at any time, and encourage mixing for the purpose of "manufacturing" liberal supplies of wheat of minimum tenderable quality. The Liverpool practice, however, goes only part way in using market values as a basis for determining allowances on tenders. No. 3 Manitoba wheat, for example, may be selling at substantially higher prices than Australian wheat, owing to special quality and limited supply, and yet grade for tender without premium, or even with an allowance to the buyer. The basis of the allowance to buyer or to seller is value for general milling purposes, whereas market price differentials may rest on value for a special milling purpose. Similarly Australian wheat, when choice soft wheats are scarce, may sell in the market at premiums over Argentine wheat much higher than would be allowed for tender on futures contracts.

Thus it happens that, while wheats economically tenderable at any time cover a considerable range as to quality, they are usually restricted in practice to a particular origin and type. Under some circumstances tenders will be chiefly or wholly of Argentine wheat, under other circumstances they may be wholly of Australian wheat. When the United States is on an export basis either American hard winter or American soft winter wheat may be the only wheat tendered. When Canadian supplies are uncommonly large the basis of the Liverpool future may even be No. 2 or No. 3 Manitoba.

To one unfamiliar with the wheat trade and

the milling industry, such variation in the class of wheat tendered on futures contracts may appear to render futures prices highly variable or even erratic in their significance. Only in a superficial sense is this true. In more fundamental respects, the reverse is the case. The basis of the contract is always good wheat, suitable, both technically and economically, for general milling purposes. The futures price tends always to be a price of such wheat. Prices of a more rigidly defined classification of wheat may represent always wheat *technically* suitable for general milling purposes, but the wheat they represent may often be *economically* unsuited to general milling purposes, owing to relative scarcity. For maintenance of price comparability, use of a commodity is a more reliable criterion than technical description.

Control of manipulation.—An important characteristic of the Liverpool futures contract is associated with rules and practices that restrict opportunity for manipulation. The Liverpool wheat futures market has the reputation of having avoided any important speculative manipulation of the type of a "corner" or "squeeze" during its long history. Its relative freedom from such manipulation is a remarkable fact, for the technical circumstances under which it operates seem peculiarly favorable to the execution of corners and squeezes.

Stocks of wheat in the United Kingdom available for tender on Liverpool futures contracts are never large, by comparison with stocks which might be drawn on at an important North American market, and are often small. Potential supplies, generally available in large quantities from exporting countries, cannot be obtained in volume on short notice to meet an unexpected speculative demand. Quantities of tenderable wheat in store at Liverpool and Birkenhead, and therefore readily available for tender on futures contracts, are often very small.

These circumstances have required vigilance to forestall or to overcome attempts at corners and squeezes. Discussions of proposed changes in the futures contract seem always to have taken account of the merits of the proposal from that standpoint. Technical provisions,

however, have been relatively unimportant in the avoidance of corners and squeezes at Liverpool. The success of the Liverpool Corn Trade Association in preventing serious manipulation has rested primarily on the will of the membership. Substantial unanimity in disapproval of such manipulation has deterred individuals from attempting it and has supported officials of the Association in blocking such attempts through their practice in handling cases of failure to make delivery on futures contracts.

We are indebted to Mr. F. W. G. Urquhart, Secretary of the Association, for the following statement of the practice in handling defaults in tendering:

There is no rule of the Association that the Seller must deliver the wheat against his Contract. There is no rule of Law that he must do so.

In the event of default, the settlement is made under Rule 6 of Section C of our Bye-laws.¹

Now, supposing that the "Futures" Market had been deliberately run-up, the settlement is made by the notional re-sale by the Buyer to the defaulting Seller at an "invoicing-back" price. Parties themselves may agree on that price, or they may submit the question to Arbitrators and, if not satisfied with the Arbitrators' Award, they can appeal to the Board of Directors.

The Directors have made it public, from time to time, that the "invoicing-back" price shall be the price of actual wheat, and not the fictitious price (if, indeed, it was a fictitious price) at which the Market closed at the end of the delivery month.

This policy is based upon three considerations.

First, the Buyer should not, in Law, receive more than the damages which he has suffered by the Seller's default; second, it would do the Trade little good if the Market could be manipulated; and third, it is possible that, if "Corners" and

"Squeezes" were tolerated by the Trade, the Government would take action in the interest of Consumers.

TRADERS IN LIVERPOOL FUTURES

Transactions in futures contracts are effected at Liverpool, as in other modern futures markets, entirely by members of the exchange; but, as in other markets, a large proportion of the members operate chiefly or wholly as agents transacting business for non-members. Purchases and sales originate partly with members who personally execute trades for themselves or the firms they represent; partly with members whose transactions are executed by others who serve as brokers; and partly by nonmembers, who must place their orders through brokers.

The membership of the Liverpool Corn Trade Association on March 31, 1938 numbered 219 individuals, representing 119 firms or companies. In addition, 67 brokers or brokerage firms were associated with the exchange as "subscribers." From the standpoint of American exchange practice a subscriber-broker may be described as a sort of associate member. He may accept orders for transaction on the exchange and turn these over for execution by a member at the same brokerage rate as though the subscriber were himself a member. At Liverpool the term broker is applied both to an individual or firm doing what in the United States would be called a brokerage business and to one doing what here would be designated as a commission business. Similarly, the term brokerage covers what in the United States would be distinguished as a commission, in addition to brokerage in the special sense.

Traders doing business on the Liverpool exchange, either directly or through brokers, include most firms directly engaged in the international grain trade, British millers, foreign grain dealers indirectly involved in the international grain trade, and speculative traders in most commercial and financial centers of the world. The Liverpool exchange, as the dominant wheat futures market outside of North America, apparently tends to receive most of the hedging transactions that do not naturally seek a more specialized localized

¹ This rule reads: "Unless otherwise provided in the Contract, if a tender has been made in due time, but the goods tendered are not in accordance with the Contract, and the period for tenders has expired, the goods shall be invoiced back at such price as may be decided by arbitration, not being more than 5 per cent in excess of the price of the last business day of the said period; but in case a Seller for Future Delivery or for Shipment and Delivery shall make no tender or shall make default in shipping, declaring shipment, or delivering in pursuance of the tender, the Contract shall be closed by invoicing back the goods contracted for at such price as may be determined by arbitration. This Rule shall apply whether the price fixed by arbitration is higher or lower than the Contract price. All claims for special damage by either party shall be excluded."

market. Brokers (commission houses) maintaining a connection with the Liverpool market as subscribers, to handle trades in Liverpool futures for their clients, are most numerous in the United Kingdom and in Continental European countries. Some are located in the United States, Canada, and Australia, and one or two each in Greece, Egypt, India, and Argentina.

The hedging sales carried by the Liverpool market are chiefly on wheat afloat for Europe or in store in the United Kingdom. Stocks afloat in recent years have varied mostly within the range 20–50 million bushels. Port stocks in the United Kingdom, representing at least a large fraction of wheat supplies in the hands of merchants and millers, have varied mostly within the range 8–20 million bushels. Of wheat stocks in the United Kingdom, a considerable portion is normally held by mills against forward sales of flour and is therefore not hedged in the futures market. Some wheat on passage may be carried unhedged for the same reason. Hedges on much of the wheat on passage are carried in North American futures markets or in Buenos Aires. The total amount of wheat hedged in Liverpool at any time must be substantially less than the total of open futures contracts at Liverpool.

A useful estimate of the volume of hedge sales carried by the Liverpool market may be derived from the statistics of open contracts given earlier. These range, in the available data, from 785 loads to 3,551 loads, or from 6.3 million to 28.4 million bushels. If the total of individual open commitments was about double¹ the volume of open contracts on the clearinghouse records, and if hedge sales constituted about three-fourths of the individual short commitments (rough estimates that appear not unreasonable, although made on slender bases), the total hedge sales would have been about 50 per cent in excess of the open contracts on the clearinghouse record. Estimated on this rough basis, it would appear that the volume of hedge sales carried in the Liverpool market during 1931–1937 may have varied within the range 10–42 million bushels.

Typically, futures contracts which have a hedger on the selling side have a speculator on the buying side. Speculators, in general, carry

the risks which merchants pass on by the device of hedging. To some extent hedging sales are absorbed by hedging purchases of other traders, chiefly millers. At Liverpool the proportion of hedging sales so absorbed may be considerably larger than is usual in North American markets. Millers in the British Isles grind about 20 million bushels of wheat monthly. Their forward sales of flour may be covered by hedging purchases in Liverpool futures in such volume as to offset a substantial fraction of the hedging sales in the market. Liverpool may thus be relatively less dependent on speculative buyers for the carrying of hedges than are most other futures markets.

There is very little trading in Liverpool wheat futures by the public, such as exists in North America. People of small means and little knowledge of conditions in commodity markets are not much given to commodity speculation in the United Kingdom, while this class of traders in North America tends to confine itself to trading in domestic markets. The speculative side of hedging transactions at Liverpool is carried mainly by traders of substantial means, reasonably well informed of market conditions.

Futures contracts at Liverpool are held open much longer, on the average, than at Chicago and Winnipeg. During periods of moderate trading activity, the average life of a futures contract at either Chicago or Winnipeg seems to be about 5 days. At Liverpool, on the other hand, the average life of a futures contract under similar circumstances seems to be about 20 days. For the smaller North American markets, which attract less peculiarly speculative trading than Chicago and Winnipeg, the average seems to be 10–15 days.²

¹ See pp. 132, 134 above.

² At Chicago the annual volume of trading in the years 1924–1937 has varied from 62 times the average daily open commitments (in 1932) to 173 times the average daily open commitments (in 1925). The average life of a futures contract, in terms of individual commitments (approximately) and calendar days, has therefore ranged in different years from 2.1 days to 5.9 days. During 1931–1937, it averaged 5.1 days. Statistics for Winnipeg on which a similar calculation may be based are available only for the period May 1, 1929—March 31, 1931 (*Report of the Commission to Enquire into Trading in Grain Futures*, p. 49). During this period of 581 trading days or 700 calendar days the average volume of recorded open contracts was

Different classes of traders follow markedly different trading practices. Many hedge sales are kept open for several weeks or even months: that is to say, a sale for future delivery having been made as a hedge, it may be several weeks or months before the hedge is removed by an offsetting purchase for future delivery. It may remain open until actual delivery is effected. Some speculative purchases, likewise, are kept open for several weeks or months. On the other hand, some hedging contracts and many contracts entered for speculative purposes are kept open for only a few days. A merchant, for example, may place a hedge against a cargo of wheat just purchased, and a few days later sell the cargo and remove his hedge. Many speculators (in Chicago, at least) follow the practice of changing their position in the market frequently. They buy, for example, hoping for a quick profit; if the price moves in their favor, they take their profits quickly; or if the price moves contrary to their hopes, they try to cut short their losses by closing out their contracts promptly. In every market there are also the

53.4 million bushels, and the average volume of trading per trading day was 23.5 million bushels. These figures indicate an average life of futures contracts of 2.27 trading days or 2.73 calendar days. But the statistics of open contracts at Winnipeg for this period are based on the clearinghouse record, and if it be assumed that the volume of total individual open commitments was double the volume of contracts recorded in the clearinghouse, the average life of a futures contract at Winnipeg during this period may be estimated, in terms of individual commitments, at about 5.4 calendar days. This estimate compares with an average for Chicago during the same period of 4.5 days.

For Liverpool, similar calculations may be made from the statistics of open contracts for the months of May and November for 1931-1937 (p. 133), and statistics of volume of trading during the same months (not here reproduced). Open contracts at the clearinghouse averaged 1,886 loads, and volume of trading per month 5,435 loads. Estimating individual open commitments at twice the volume of open contracts on the clearinghouse record, the turnover of individual contracts appears to have averaged about 1.44 times per month. This implies an average life of individual contracts (commitments) of about 21 days. As noted above, the average for Chicago during 1931-1937 (but including all months) was 5.1 days. For Minneapolis, Kansas City, and Duluth, the corresponding averages are 10.8, 10.6, and 12.9 days, respectively. (Computations for the United States from data of the Commodity Exchange Administration, partly unpublished.)

"scalpers" who may buy and sell several times during the course of a day. For them, the life of a futures contract is to be measured in hours or even in minutes.

The computed average length of life of futures contracts should not be regarded as a typical or representative figure. It resembles an average of weights of domestic animals on a farm. On a farm with many cattle and few sheep and poultry, the average weight is high. If sheep predominate, the average weight of all the animals will be low, and if poultry predominates and large animals are few, the average weight may be very low. The relatively long average life of futures contracts at Liverpool as compared with Winnipeg and Chicago possibly reflects in part a lower ratio of scalping trades to other trades. Probably, however, it reflects chiefly a great difference in the proportion of short-term speculative trading.

CLEARING OF TRANSACTIONS

The clearing of commodity transactions is a process for which there is little occasion except in connection with speculative and hedging transactions. When transfer of ownership of a commodity is postponed for some time after the contract to sell is made, the original purchaser may subsequently make a sale of a like quantity and description of the commodity for delivery within the same period as that in which he had originally contracted to accept delivery. Business may then be simplified by arranging that the first purchaser shall drop out of the transaction, the original seller becoming obligated to transfer ownership of the designated quantity and description of the commodity directly to the final buyer. In dealings on a futures market, in which transactions are primarily for speculation or hedging, all but a small proportion of purchases and of sales calling for delivery in any specified month have been offset by equal sales or purchases before the delivery month arrives. Under these circumstances a great deal of unnecessary labor may be averted by use of a system of registration of contracts and of elimination (clearing) of offsetting contracts. Futures contracts lend themselves especially well to clearing because the description of the commodity covered and the time of delivery

specified are identical among all contracts for delivery in any designated month.

Clearing of futures contracts at Liverpool is effected both privately and through the clearinghouse. Contracts kept open for only a short time—mainly those of scalpers buying and selling again within the same day—are usually not registered with the clearinghouse. Price differences on such transactions may readily be settled privately with a saving of clearinghouse fees and some gain in promptness of settlement. Probably only about two-thirds of the recorded trades, as published in the *Corn Trade News*, are registered at the clearinghouse.¹ But a large proportion—perhaps nearly all—of the contracts not registered are those that have been made and offset by opposite contracts during the course of the day. Presumably the clearinghouse record shows nearly all of the contracts remaining in effect between members at the end of each business day.

The clearinghouse is an organization conducted as part of the activities of the Liverpool Corn Trade Association. Its business is conducted by a committee of the Association, consisting of the President, the Vice-President, and seven other members of the Association. Its activities include the clearing of c.i.f. contracts and "shipment and delivery" contracts as well as futures contracts.

Registration of futures contracts with the clearinghouse has three main advantages which assume special importance in connection with contracts kept open for a considerable time. It permits the registrant to be freed of all obligations after a contract has been offset by an opposite contract and settlement made on the basis of the price difference. It shifts to the clearinghouse responsibility for

seeing that the margin guaranteeing fulfillment by the other party to the contract is maintained. And it automatically carries with it insurance against the remote contingency of default by the other party to the contract.² If one party to a contract elects to register it with the clearinghouse, the other is required to register also.

Clearing of futures contracts is based on the formation of "strings."³ For the purpose of registration, each load of 4,800 centals is treated as a separate contract. When an initial buyer enters into a later contract in the capacity of seller, he may (and customarily does) have his two contracts arranged in a string, consisting perhaps only of the first seller, himself, and the buyer to whom he has just sold. Thereafter he appears with respect to these contracts only as an intermediate party. If the initial seller then makes an offsetting purchase, he also may become an intermediate party, with the new seller now at the selling end of the string. Strings may thus be extended indefinitely. The intermediate parties are released from liability, the seller at one end of the string and the buyer at the other being regarded as the only contracting parties. These two are technically designated as the first seller and the last buyer on the string. Tender on the contracts in a string is initiated by the "first seller." He hands the tender to the Secretary, who signs it over to the "last buyer." By this process the entire string of contracts is "cleared."

Although all futures contracts registered with the clearinghouse remain technically in effect until cleared through tender of actual wheat, financial obligations on contracts terminate with settlement when offsetting contracts are entered in a string. The member who has both bought and sold has completed a transaction, so far as he is concerned, and has taken his profit or paid his loss. A member making an initial purchase or sale registered at the clearinghouse pays in an original margin, now set at £20 per load (1*d.* per cental). In addition, any apparent loss, measured by the difference between the contract price and the "settling price" of the day, must be promptly paid. On the other hand, profits may be withdrawn only after they have been "real-

¹ Estimate furnished by the Secretary of the Liverpool Corn Trade Association.

² Registered contracts are insured with the Grain Contract Insurance Company, Ltd., a subsidiary of the Liverpool Corn Trade Association.

³ All futures markets in the United States now use a "complete" clearing system, such as was adopted in 1891 by the Minneapolis Chamber of Commerce but not until 1925 by the Chicago Board of Trade. The complete clearing system simplifies clearing procedure by making the clearinghouse an intermediary on all contracts.

ized" through registration of an offsetting contract, making the member an intermediate party in a "string." Apparent profits may, however, be set off against apparent losses that may exist on other contracts registered with the clearinghouse.

All financial transactions connected with the

operations of the clearinghouse are handled by a bank or banks designated by the directors of the Corn Trade Association. The clearinghouse keeps the records of payments due from and to members of the Association in connection with registered contracts, but does not itself receive or make such payments.

III. EVOLUTION OF FUTURES TRADING

The growth of wheat trading in Liverpool centers largely around the development of the Liverpool grain exchange. It is definitely known that a corn market existed on Brunswick Street in 1808, and there is evidence that before 1808 an informal corn market had existed there.¹ But it was not until 1853 that a formal organization, The Association of the Liverpool Corn Trade, was organized. The members were bound by a few short and simple rules whose main object was to compel differences to be settled by arbitration.² In 1886, the Association was incorporated as the Liverpool Corn Exchange. It was succeeded in 1897 by the present company, the Liverpool Corn Trade Association, Limited.

The principal "objects" of the present Association were listed in the original memorandum.³ The original objects merit repetition as they are still the general framework upon which the policy of the Association is based. They are as follows:

To take over the assets and liabilities of its predecessor—the Liverpool Corn Exchange; to promote or oppose legislation or other measures

¹ G. J. S. Broomhall and J. H. Hubback, *Corn Trade Memories* (Liverpool, 1930), p. 1. In British parlance, "corn" means "grain," not "Indian corn" or maize.

² *Memorandum Regarding the Liverpool Grain Trade Presented to a Party of Canadian Farmers Visiting the Corn Exchange on Tuesday, January 17, 1928* (Liverpool, 1928).

³ *Memorandum of the Liverpool Corn Trade Association, Limited, April 7, 1897* (Liverpool, 1897).

⁴ The *Corn Trade News* affords a source of price quotations from December 11, 1887, since daily quotations were accompanied by quotations for the corresponding date one year earlier. It was founded by George J. S. Broomhall and F. A. M. Kirby. The latter severed his connection with the *Corn Trade News* after about a year and founded the grain firm of Kirby and Co., while Mr. Broomhall continued as editor and publisher of the *Corn Trade News* until his death on June 23, 1938.

calculated to affect the Corn Trade generally; to adjust and settle disputes between persons engaged in the Grain Trade by establishing a Tribunal of Reference for the amicable settlement of such disputes; to procure, make up and preserve Standards of Grain and breadstuffs, and to collect, preserve and disseminate statistical and other useful information connected with the Corn Trade throughout the World; to take such measures as the Company might think fit for the arrangements, regulations and development of the Corn Trade, to reduce the landing, warehousing and shipping charges incident to the Trade and generally to promote the Trade, increase its amount and augment the facilities with which it might be conducted; to provide, regulate and maintain a suitable building, Exchange, Market and Newsroom for the purpose of the Corn Trade in Liverpool; to establish and maintain a Clearing House for the clearance of contracts or periodical settlements of contracts and for facilitating payments between persons engaged in the Corn Trade.

EARLY DEVELOPMENTS IN FUTURES TRADING

Information on trading in wheat futures at Liverpool is fragmentary for the period prior to establishment of *Broomhall's Corn Trade News*, on December 11, 1888 (first published under the title *Liverpool Corn Trade News*).⁴ The earliest price records we have found are those published in the *Chicago Daily Trade Bulletin* (appearing before 1887 as the *Daily Commercial Bulletin*). This market paper had published daily wheat price quotations cabled from Liverpool and other European markets for many years, but included no quotations on Liverpool wheat futures until May 1886. It then began regular publication of what were described as futures prices on "No. 1 California," "No. 1 Bombay," "No. 1 Delhi," and "Kurrachee Red" wheats.

According to records of the Liverpool Corn Trade Association, the first future delivery contract was adopted in November 1883 and

the No. 1 Californian contract not until September 1886.¹ Trading in Indian wheats on "Shipment and Delivery" contracts was active until 1914, but has been unimportant during recent years. These have many points of similarity to "contracts for future delivery" but are distinguishable on the ground that they do not call for delivery "within one specified month."²

Although this evidence appears in part contradictory, it seems to warrant certain fairly definite inferences. We judge that the futures market at Liverpool was regarded as insignificant prior to 1886. Probably the futures contracts in use at first allowed the contracting parties to specify the type of wheat to be delivered; when trading in futures contracts assumed more importance early in 1886, traders chose generally to designate No. 1 Californian wheat for delivery; and in September of that year the Association decided to change the form of the contract, specifically requiring delivery of No. 1 Californian wheat. Possibly formal distinction was not drawn between the types of "futures" contracts on which the Californian and the Indian wheats were traded prior to adoption of the specific Californian wheat futures contract in September 1886. Apparently the Indian wheat contracts continued to be regarded as a sort of futures contract for many years longer. Prices of Indian wheat futures were never published in the *Corn Trade News*, but in the regular

weekly table of "estimated sales of Liverpool futures" Indian wheat was included without distinction from others until November 1897. From November 2, 1897 the estimated sales of Indian wheat "futures" were distinguished in this table by designation as "Indian wheat parcels."³ Even in May 1886, however, there was a clear difference between the Californian and the Indian wheat contracts as regards character of the trading. The Indian wheat contracts then and later were rarely if ever quoted for months more than two removed from the date of the contract, whereas the Californian wheat contracts were generally quoted as much as about five months ahead.⁴

Records of the volume of trading in wheat futures at Liverpool and of tenders on futures contracts have been preserved only since establishment of the *Corn Trade News* at the end of 1888. In 1889 the total of recorded trades was just under 4.5 million quarters (36 million bushels). Tenders on futures contracts totaled 401 thousand quarters, or 8.9 per cent of the volume of trading. This ratio reflects use of the futures contract as a merchandising contract to a much greater degree than in more recent years. In 1890 the volume of trading increased 40 per cent over that of the previous year and tenders increased proportionally. Shortage in the Californian crop of 1890 was followed by substantially reduced tenders on futures contracts during 1891, although the volume of trading increased slightly.

The annual recorded volumes of trading in the Californian and in the American Red and Graded wheat futures, respectively, during 1889-1913 are shown in the tabulation on page 144, together with reported tenders of different descriptions of wheat, all in "loads" of 1000 quarters.⁵

During 1896 a tendency toward increasing concentration of trading in contracts for delivery in certain months was accompanied by a decline in the volume of trading in Californian futures. In October 1896 trading in Californian futures was temporarily discontinued. A revival of trading in this contract in 1897 was short-lived. In 1901 another attempt was made to revive futures trading in Californian wheat, apparently on a contract permitting

¹ Information from the Secretary of the Association under date of Aug. 28, 1936.

² See definition of a future, p. 135.

³ The list published under the caption "estimated sales of Liverpool wheat futures" on October 26, 1897 comprised the following items and units: Californian Wheat, centals; Red Winter Wheat, centals; Mixed Maize, centals; Round Yellow Maize, centals; Indian Wheat, tons.

⁴ Probably existence of a significant distinction between ordinary futures contracts and the contracts used for Indian wheat was always recognized at Liverpool, even though the distinction was not sharply drawn in early years, nor rigidly adhered to. The Secretary of the Association writes us, under date of Aug. 15, 1938, that "Indian Wheat was never included in the Liverpool 'Futures' Contract."

⁵ Data from *Broomhall's Corn Trade News*, Jan. 6, 1900, p. 65; Jan. 11, 1907, p. 103; Jan. 22, 1914, p. 257. The quarter was taken as 500 lbs. for Californian wheat, but 480 lbs. for other wheats.

delivery of other white wheats also,¹ but trading continued for less than a year.

VOLUME OF TRADING AND TENDERS ON FUTURES
(Thousand quarters)

Year	Trading		Tenders*		
	Californian	Red or Graded	Californian	American Red	Argentine
1889.....	4,456	.....	401	...	...
1890.....	6,292	.....	563	...	...
1891.....	6,668	3,362	396	74	...
1892.....	1,036	10,267	206	660	...
1893.....	1,500	12,670	210	919	...
1894.....	1,218	11,545	198	653	...
1895.....	1,438	13,967	255	983	...
1896.....	564	17,910	60	571	...
1897.....	38	25,422	17	519	...
1898.....	...	26,940	..	499	...
1899.....	...	17,735	..	514	...
1900.....	...	16,429	..	372	...
1901.....	27 ^b	16,764	..	529	...
1902.....	321 ^b	13,266	7 ^b	333	...
1903.....	...	9,954	..	324 ^c	...
1904.....	...	13,277	..	371	...
1905.....	...	12,140	..	275	...
1906.....	...	9,668	..	306	...
1907.....	...	20,564	..	462	...
1908.....	...	24,054	..	222	168
1909.....	...	26,841	..	144	306
1910.....	...	35,887	..	115	878
1911.....	...	32,893	..	226	242
1912.....	...	31,520	..	162	176
1913.....	...	19,792	..	537	8

* In addition, 10 thousand quarters of Australian wheat were tendered in 1911 and 12 thousand in 1912.

^b White wheat, not necessarily Californian.

^c American Red and Argentine wheats not shown separately.

Introduction of the American Red Wheat contract in 1891 was followed almost immediately by a sharp decline in trading in the Californian contract. But although the red wheat future was preferred for general speculative and hedging purposes, the Californian future continued in active use for nearly five years. Trading in it represented about 10 per cent of the total annual volume of futures trading at Liverpool with extraordinary uniformity during the four years 1892-1895. Use of the Californian future as a means of merchandising

¹ The *Corn Trade News* on Dec. 19, 1901 (p. 1571), carried the item "Californian Wheat Futures—After nearly 3½ years' absence of trading business in this class of Wheat was revived today and a sale for May delivery was effected. . . ." The next transaction, two days later, was discussed under the caption "Liverpool White Wheat Futures," and on Dec. 16, the heading under which quotation appeared was changed from "No. 1 Cali Wheat" to "White Wheat."

declined, annual tenders of Californian wheat contracts falling to less than half of the average for the previous three years, but the proportion of trades reaching fulfilment in actual delivery more than doubled. In 1892, nearly one in five sales on Californian futures contracts terminated in delivery of the wheat.

THE "AMERICAN RED WHEAT" FUTURE

We have suggested earlier, that probably Californian wheat became the basis of Liverpool futures trading largely because good standardization of the basis of the contract was easily attained (p. 125). Nevertheless this future left much to be desired. On August 1, 1891 the *Corn Trade News* commented as follows:

It has been proposed, and the idea is favorably entertained generally that the same privilege now enjoyed by Californian of being sold at the "call" for future delivery should be extended to American Red Wheat, so that shippers would have the opportunity of selling ahead against their shipments when so desired.

To make the basis of contracts as broad as possible it would seem to be the right policy to adopt a standard co-equal to the greater bulk of Red Wheat now being harvested in America. Including Canadian Red there will be approximately 500,000,000 bushels of wheat harvested on the American Continent this season, of which it is calculated that 400,000,000 bushels will grade as No. 2 Winter or Spring, or better.

Seeing that there will be a practically unlimited supply of contract wheat, within two or three weeks reach of Liverpool there can be no fear of "corners" and trading in "Liverpool Standard Wheat" may be indulged in to almost any extent, and should acquire as much popularity as trading in New York or Chicago.

Very shortly thereafter, arrangements for trading in American Red Wheat futures were completed. The basis of the contract was to be No. 2 Spring or No. 2 Winter wheat from the United States and Canada east of the Rockies. To meet the problem of rather substantial variations in quality of these wheats, provision was made for making up standards from time to time on which wheat submitted for tender should be judged. Trading in futures based on the new contract began on August 10, 1891.

The red wheat future, like the Californian future, was largely used in the early years as

a means of merchandising. All months continued in use as delivery months. The ratio of tenders to total trades was lower than when the Californian future was the only one traded, but from 1892 through 1895 about 7 per cent of sales of the red wheat future reached fulfilment in delivery. In 1896 a substantial further increase in the volume of trading was accompanied by accentuation of a previous tendency for trading to concentrate in contracts for delivery in certain months. In 1897 this tendency became so strong that trading in contracts for delivery in some months was discontinued. There was practically no trading in contracts for delivery in April 1897, and apparently none in the June option. Only a few transactions were recorded in contracts for delivery in August, October, or November. Beginning in 1898, trading was restricted almost wholly to five futures: March, May, July, September, and December. Discontinuance of trading in certain delivery months inevitably reduced the opportunity for using the futures contracts for merchandising purposes. From 1897 tenders on futures contracts were generally only 2-3 per cent of the annual volume of trading. The change in practice may be supposed to have worked to the advantage of merchandisers, however, for any small loss through reduction of opportunity to use futures contracts for merchandising purposes was probably more than offset by increase in the usefulness of the market for hedging owing to increased trading in the futures retained.

The five months of delivery adopted in 1897 have been retained with little change since. In 1903 the experiment was made of trading for October delivery, while continuing trading also in the September; but this was not continued the next year. In 1910, however, trading in the October delivery was introduced in place of the September. Since then October has been used as the autumn delivery month in every year except 1922.

THE ORIGINAL GRADED WHEAT FUTURE

In January 1903, pressure for a change in the Liverpool wheat futures contract culminated in appointment of an able committee to consider the framing of a new contract. The

immediate occasion for revision of the basis of futures trading was a desire for inclusion of Argentine wheat among the tenderable varieties and a hope that a change in the basis of trading might help to revive business in futures, which had fallen to a low ebb. The sentiment in favor of change presented opportunity for a bold attack on the problem of improving the basis for futures trading in wheat. The outcome was adoption of a contract that permitted delivery of any one of a wide range of wheats at prices differing by specified amounts from the price at which the contract was made.

The basis of the new contract was wheat classed as "Grade A," a seller tendering such wheat receiving the contract price. A seller tendering Grade B, C, or D received a price 2*d.*, 4*d.*, or 5½*d.* below the contract price, depending on the grade delivered. This provision for price differences according to grade gave a new significance to grading in connection with the futures contract and led to application of the term "Graded Red Wheat contract." To distinguish it from the revised form of graded contract adopted later we here designate it as the "Grade A contract."

Inasmuch as previous contracts had specified delivery of wheat meeting certain grade requirements, the distinguishing feature of the new provisions was not an introduction of grading, but the application of a difference system in connection with the contract. It might have been characterized more distinctively as a "difference contract." It represented what appears to have been the first application of a difference system in connection with trading in grain futures. The Chicago Board of Trade followed suit to a limited extent in June of the same year.¹

The new contract represented a change of such importance as to merit examination of the contemporary view of the reasons for its adoption. These were well expressed in a statement by the president of the Association, Colonel Robert Montgomery, V.D., at a general meeting called for consideration of the proposals. He said:

¹ It then admitted No. 2 Hard Winter wheat to delivery on Chicago futures at a discount of 5 cents a bushel.

The form of the contract which is now submitted for your approval, has been passed by your Directors after very long and careful consideration. In January, last, a requisition was presented to the Board, asking for a form of contract which would enable trading to be done in River Plate futures. It appeared, however, that a good deal more than this was needed to revive the trade, and accordingly, your Directors set to work to devise a scheme, which, while taking in River Plate Wheat, would also have the effect of extending the basis of the American Red Wheat option. I do not think I need remind you that no scheme for carrying on business, however perfect it may be, will necessarily bring trade. The present stagnation is due to a variety of causes, many of them—I might say most of them—entirely beyond our control. It is felt in other trades than ours, and quite as much in other centres of commerce as in Liverpool. Nevertheless, we should leave no plan untried in our efforts to attract business. In a measure this contract is an experiment and does not in any way interfere with the usual trade being carried on under the old Red Wheat contract; but if it be found workable, no doubt the old form, sooner or later, would be suspended. What I conceive to be the chief weakness of the old contract is its exceedingly narrow basis. As you know, it is not possible to tender any Wheat more than one halfpenny inferior to the Standard, and no one can afford to tender Wheat that is appreciably better than the Standard. The consequence is that frequently there is not sufficient material on which to trade. Another weakness is the changing character of the Standard, which though necessary, produces an element of uncertainty, and so deters buyers and sellers alike from dealing as freely as they might otherwise wish to do. The object of the new contract is to remedy these defects in our option trade. If you will carefully examine its provisions, I think you will find that it establishes something like permanency in the basis of trade. It fixes that basis upon the very best class of Wheat and provides so wide a range that there shall always be sufficient Wheat to make trading reasonably safe. I wish to say just a word or two upon the differences in price, which have been fixed between the various grades which are tenderable under the contract. It is a matter to which your Directors have given a great deal of thought. In order to avoid any chance of manipulation, it was felt that these differences must be determined before hand, and not left to be assessed by arbitration, or a Committee, when the grain came to be tendered. Your Directors do not pretend to say that the difference they have fixed between the various grades will, necessarily at all times, be the market differences. We know that the exigencies of supply and demand will cause one grade to appreciate in value compared with another grade. What has been aimed at is,

to provide that one or more of the grades will always be available. Another feature of the scheme is the grading of Wheat. Many people feel that a great defect in our present method of business is the uncertainty of Arbitration. A tender cannot be made until the month of delivery, and then the seller has to submit his Wheat to the judgment of arbitrators. It may be that one set of arbitrators will pass the Wheat, and when the Wheat is sold again, and re-tendered and a fresh arbitration takes place, it may be rejected. When Wheat has been rejected it is often most difficult to sell. Now, in the new scheme the holder of Wheat may at any time submit it for grading, and having obtained his certificate, the Wheat will be unquestioned when tendered, provided it be in condition. We have endeavoured as far as possible to safeguard all interests in the matter of grading. The Committee whose duty it will be to grade Wheat will not be informed who owns it, or by what ship it arrived, and in the interests of buyers, no certificate will be issued, unless four out of the five members of the Committee are agreed upon the grade. Grading Rules have been framed for the guidance of the Committee, but, of course, something must be left to their judgment and discretion. Though we invite your opinion upon the scheme I would ask you to remember that it has been framed with the most serious care and deliberation, as I said at the outset, the scheme is an experiment and I ask you not to be too critical of its details. It is only when it is in operation that we can discover its defects, if it has any, and I need not assure you that your Directors will watch its progress with care, and be ready to make any change that experience may prove to be required. I have only one word more to add, and that is to express the sincerest acknowledgment of the work which has been done by the Chairman of the contracts Committee, Mr. Hubback, and the Vice-Chairman, Mr. Edward Hutchinson, to produce a workable scheme and also to express our indebtedness to Mr. John Ten Bosch, and Mr. Arthur Walker for their valuable help and suggestions during the many hours they spent with us on the contracts Committee.¹

In the course of subsequent discussion at the meeting, the vice-president, Mr. John H. Hubback, said that not only Argentine, but also Russian wheat would have been added to the tenderable list if it had been found practicable. The feasibility of including Rus-

¹ *Corn Trade News*, April 15, 1903, p. 1009. The fact that the *Corn Trade News* chose to reproduce this statement and report the ensuing discussion in some detail suggests that the new proposal was regarded at the time as an important one. No other change in the futures contract during the history of the Association received more than casual mention in the *Corn Trade News*.

sian wheat in the tenderable list was discussed at later times. The difficulty of grading Russian wheat because of its irregularity of type and considerable quantities of extraneous matter are the dominant reasons for its exclusion as tenderable.¹

The Graded Red Wheat futures contract thus proposed was adopted at this meeting (April 15), and the first trading in it took place on the same day, for July delivery. The new contract was not much used in trading for July delivery and no tenders were made on such contracts in July, but it entirely superseded the old contract as the basis of trading for later deliveries. One feature of the new contract was its utilization of a superior quality of wheat as the price basis. Owing to this difference, sales for July de-

livery under the new Graded Wheat contract were at prices generally $1\frac{1}{2}$ - $2d.$ per cental above those obtained at the same time on sales under the old contract. The wheats tenderable on the old contract might be classed as Grade B wheats under the new contract, tenderable only with an allowance of $2d.$ per cental to the buyer. The maximum price difference between the two contracts was slightly over $2d.$ per cental. When the market difference between prices of Grade A and Grade B wheat was less than $2d.$ per cental, the price difference between the two contracts tended to equal the market difference between prices of these two grades.

The only wheat which might be classed as Grade A under the new contract was spring wheat from the United States or Canada, "well cleaned, containing not less than 75 per cent of hard grains, and weighing not less than $61\frac{1}{2}$ lbs." per imperial bushel.² American spring wheat of lower quality and American winter wheats might fall in either Grade B or Grade C. Argentine wheats might fall in Grade B, C, or D.³ Discounts on the lower grades, as noted above, were $2d.$, $4d.$, and $5\frac{1}{2}d.$ respectively.

THE "NEW CONTRACT" GRADED WHEAT FUTURE

Despite its marked advantages, the graded wheat futures contract as originally adopted proved unsatisfactory in certain respects. A thorough revision was undertaken in 1906 and a revised contract adopted on December 19.⁴ Its application on deliveries was postponed until after the end of May 1907, but it came into use when trading started in the July future in January 1907.

In the revision, the nominal basis of the contract was substantially lowered, the range of allowances for quality was diminished from $5\frac{1}{2}d.$ to $2d.$ per cental, formal grade designations were dropped, and the basis for grading was made considerably more flexible. The lowering of the basis of the contract had no great effect on the wheats actually tendered on future contracts. Although Grade A wheat was the technical basis of the original contract, actual deliveries were always of the lower grades, tendered at a discount.⁵ Effec-

¹ G. J. S. Broomhall and J. H. Hubback, *Corn Trade Memories* (Liverpool, 1930), p. 33.

² Equivalent to about $59\frac{1}{2}$ lbs. in terms of the Winchester bushel, used in the United States. We lack information on methods used in Liverpool in 1903 for determining weight per bushel, which have also a significant bearing on comparisons of weight per bushel.

³ The official definitions of the several grades and the original grading rules are reproduced in the Appendix Notes below.

⁴ The revised contract and grading rules, and associated changes in the by-laws appeared in the *Corn Trade News*, Dec. 19, 1906, p. 1721. They are not reproduced here, since the 1903 grade specifications and grading rules (reproduced in the Appendix Notes below), together with the description here of changes therefrom, sufficiently indicate the character of the new contract.

⁵ Rollin E. Smith, writing shortly after adoption of the new contract, describes Grade A under the old contract as equivalent to Manitoba No. 1 hard, and says, "This wheat was never delivered, however, nor was it expected." (*Wheat Fields and Markets of the World*, St. Louis, 1908, p. 356.) It seems unquestionable that the framers of the contract expected substantial tenders of Grade A wheat to be made on occasion. Moreover, price relations between "American Red" and the "Grade A" July futures in the spring of 1903 (p. 166) indicated that during May traders expected actual tenders of Grade A wheat on the graded wheat contract in July 1903. Mr. Smith's statement that delivery of Grade A was not expected must be interpreted either to mean merely that it was not required, or to refer to expectations at some time after adoption of the contract. Possibly his statement that Grade A was "never delivered" also should not be given its extreme literal interpretation. Other evidence, however, indicates that an unexpected turn of events, notably the shortage in North American wheat crops in 1903 and 1904, prevented fulfilment of the initial expectation that Grade A wheat would on occasion be tendered on the original graded future. Accordingly we credit Mr. Smith's statement in its extreme sense.

tively, the prices on the Grade A contract had tended to be the price of Grade B wheat plus 2*d.* per cental or the price of Grade C plus 4*d.*

Under the new contract the nominal basis was set at about the average of the wheat actually tendered under the Grade A contract. The original graded wheat contract, admitting Argentine wheats to tender for the first time, had set the requirements for them comparatively high, grade by grade. The new contract took as its basis either North American wheat which under the old regulation would fall in Grade B or a little below, or Argentine wheat which would fall in Grade C or a little below.¹ These changes might result in prices only 2*d.* per cental lower under the new contract than they would have been under the old, or as much as 4–5*d.* lower, depending on price relations among tenderable wheats. For most circumstances the lowering of the basis may be considered to have lowered the level of futures quotations 3–4*d.* per cental (without, of course, affecting the price of any particular quality of wheat).

The new contract provided for allowances of ½*d.* or 1*d.* to either buyer or seller. This narrowing of the range of allowances to only 2*d.* (instead of 5½*d.*) reflected chiefly the dropping of an ineffective provision for tender of high quality spring wheat and the improvement in rating of Argentine wheat. The intent to introduce greater flexibility in grading was reflected in the elimination of formally designated grades; in simplification of the grading rules and insertion in them of the admonition that "undue prominence must not be given to weight alone"; and in the provision for gradations of as little as ½*d.* per cental in the allowances in place of the steps of 2*d.* or 1½*d.*

¹ This comparison is based on the required weights per bushel, which were set as follows, in pounds: Manitoba, 60; Northern Spring, 59; other spring, 60; Soft Winter, 61; Hard Winter, 60½; Rosafé, 59½; Bahia Blanca, 61¼. (For weights under the original graded wheat contract see Appendix Notes.) Minimum weights were set at 1 lb. per bushel under these basis weights, or about the same as minimum weights under the original graded wheat contract.

² The *Corn Trade News* on Apr. 17, 1902, p. 1065, quoted the pertinent section of the Finance Act, 1901, and sections which it repealed of the Customs Consolidation Act, 1876, and the Finance Act, 1900. The general principle given expression in all these acts was the same.

between the named grades under the old contract.

Later changes in the graded wheat contract.—The only important change in the basis of Liverpool wheat futures since adoption of the "new" graded wheat contract in 1906 has been the inclusion of Australian wheat among those tenderable. Although this change was made in 1910, tenders of Australian wheat in large volume did not occur until after the war. Some changes have been made in the weight requirements for different classes of wheat: the basis weight for Australian wheat, first set at 61½ pounds, has been reduced to 60½, while the basis weights for Northern Spring and Rosafé wheats have been raised 1 pound. The tendency toward wide market differentials for quality which has developed since the war has been met by increasing the maximum allowance for superior quality to 3*d.* per cental.

EFFECTS OF CHANGE IN IMPORT DUTY

Imposition, removal, or change in the amount of an import duty on wheat in the United Kingdom tends to introduce immediately a price differential between futures contracts made before such a change and those made afterward. If the change in duty applies on all imported wheat, the price differential thus introduced is equal to the change in duty.

In 1902 imposition of a duty of 3*d.* per hundredweight (of 112 pounds) on all imported grain was officially proposed in Parliament by the Chancellor of the Exchequer on April 14 and, after approval by Parliament, became effective as of April 15. Under British law, the buyers on all contracts for future delivery made prior to imposition of the duty became liable to payment of the amount of the duty in addition to the contract price in the absence of agreement to the contrary.² The Liverpool wheat futures thus affected were those for May and July delivery. To avoid the necessity of distinguishing between contracts made before April 15 and contracts made later for delivery in the same months, the later contracts were made on the same terms as had become effective for the earlier ones, namely, that the buyer should pay the amount of the

duty in addition to the contract price. When trading began in contracts for September and later deliveries, however, they were made on the normal basis that the contract price should represent the only payment contemplated. As a result, the price of the September future was about 2.7*d.* per cental (3*d.* per hundredweight) higher in relation to the July future than it would have been if the July also had been on a duty-paid basis.

In 1903 the duty on imported grain, imposed in the previous year, was removed. Announcement that the duty would be abolished was made on April 23, to take effect from July 1, 1903. Later, provision was made for refunding duty already paid on certain stocks of imported grain held at the end of June.¹ Buyers of wheat on futures contracts entered before April 23 and calling for delivery after removal of the duty were entitled under the law to deduct the amount of the duty from the price specified in the contract. At Liverpool, the only wheat futures affected were those for July delivery. There were two of these, since trading in the Graded Red Wheat contract had recently begun. To avoid complications, later trading in these contracts was done on the basis that had unexpectedly become effective for contracts already made—namely, that 3*d.* per 112 pounds should be deducted from the contract price. The September future, in which trading began after announcement that the duty would be removed, was quoted on the usual basis. For comparisons of the prices of the July and September futures, 2.7*d.* per cental should be deducted from the quoted prices of the July futures to put them on a comparable basis.

Imposition in 1932 of a duty of 2 shillings per quarter applying only on non-Empire

wheats presented a situation different from that of imposition of a duty applicable on all imported wheats. In pursuance of provisions of the Ottawa Agreements Act, 1932, enacted November 15, the Treasury issued on the same day an order placing the new duty on wheat in effect from November 17.² The law covering the effect on futures contracts of imposition of a duty remained as it was in 1902: the buyer under contracts previously entered into was under obligation to pay in addition to the contract price the amount of any duty paid by the seller.³ To permit trading in the December 1932 and March 1933 futures to continue on the same basis as before, provision was made by the Directors of the Liverpool Corn Trade Association for new contracts also to be made on the basis of payment of duty by the buyer. The new duty, however, was without effect on the December future, because no dutiable (non-Empire) wheat was cheap enough to be tendered on that future.⁴ With respect to the March future, the ultimate effect of the duty was uncertain.

The uncertainty regarding the effect of the duty with respect to March 1933 contracts led to trading for that delivery on a "duty-paid" basis as well as on the "old terms" basis. If it had been certain that only Empire-grown wheat (Australian, in this instance) would be tendered on the March contracts, prices would have been the same on both bases. If it had been certain that only non-Empire wheat (Argentine, in this instance) would be tendered on March contracts, prices for March delivery on the "old terms" basis would have fallen to 5*d.* per cental (the rate of the duty) below prices on the duty-paid basis. When the duty went into effect, the probabilities were interpreted in the market as favoring tender of Argentine wheat on the "old terms" contracts, which permitted the seller to collect the amount of the duty from the buyer, but as favoring tender only of Australian wheat on the "new terms" contracts. In consequence the price difference between the two forms of contract was between the two possible extremes. On November 17, when trading under the new terms began, the closing price of the March future on the duty-paid basis was only 2½*d.* per cental over that for the same month

¹ *Corn Trade News*, Apr. 23, 1903, p. 1089, and May 9, 1903, p. 1243.

² *London Grain, Seed and Oil Reporter*, Nov. 16, 1932, p. 474.

³ Finance Act, 1901, Section 10.

⁴ In October and December 1932 the only wheat tendered on futures contracts was Canadian—a most extraordinary circumstance. Our information, although slightly incomplete, indicates that these were the only occasions since the war on which Canadian wheat has been tendered in volume on Liverpool futures contracts.

under the old terms. Later in the month the difference narrowed to 2*d.* per cental. Subsequently, there developed gradually an increasing probability that Argentine wheat would be tendered on both types of contracts. The price difference between them widened correspondingly, until it reached 5*d.* per cental at the end of February. In the outcome, only Argentine wheat was tendered on each type of contract.

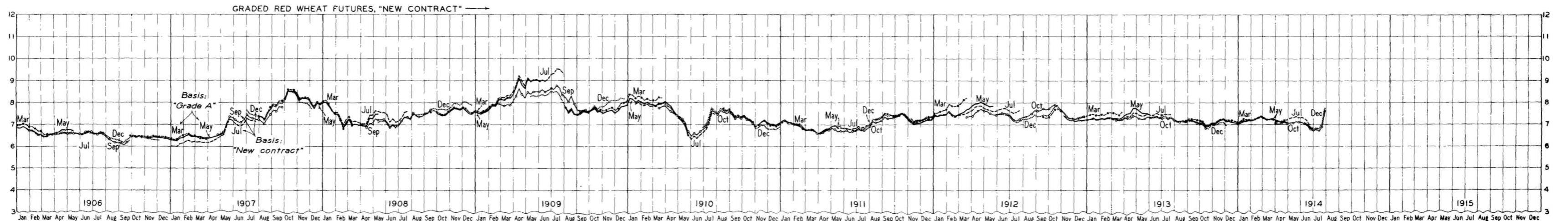
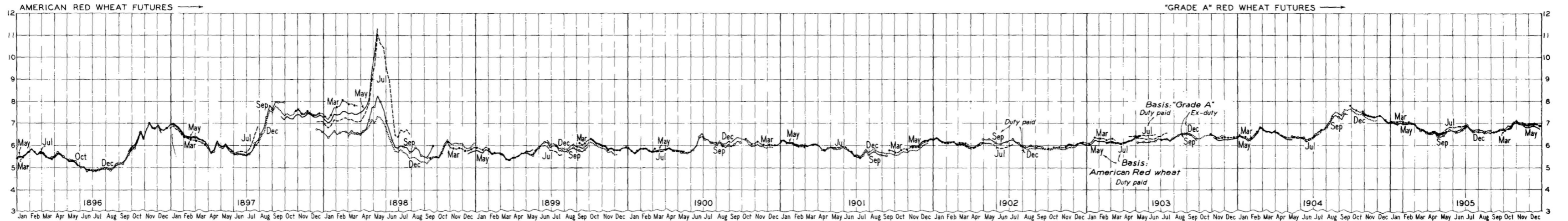
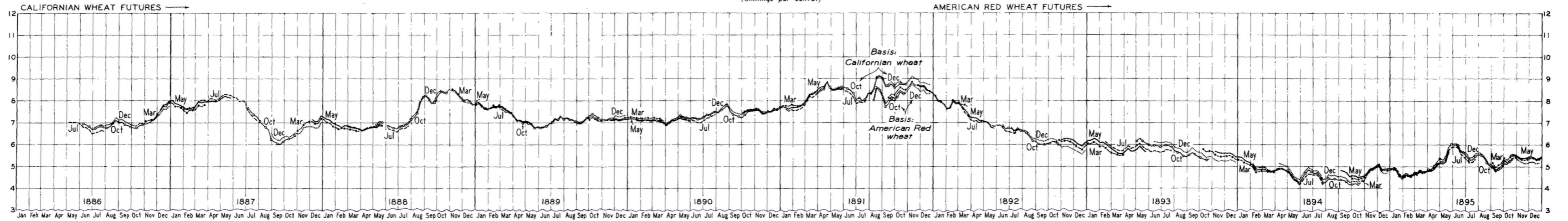
While this issue has been in the hands of the printer, announcement has been made (November 17, 1938) that the trade agreement treaty which for several months has been under negotiation between the United States and Great Britain provides for remission of duty on British imports of wheat from the United States, to take effect January 1, 1939. Duties on wheat imports from other countries also will be removed at the same

time. This will permit buyers on futures contracts already made for March or May delivery to deduct 5*d.* per cental from the contract price if they receive wheat from either the United States or Argentina in tender on their contracts. Trading in "new terms" contracts for March and May deliveries began on November 18 at prices 2–2½*d.* under those on "old terms" contracts. The subsequent course of the price spreads between the two types of contract will depend on price relations between Australian wheat, on the one hand, and either Argentine or United States wheat on the other. Canadian wheat may be left out of account from this standpoint, as certain to be too high-priced to be tendered. Only Australian wheat will be tendered on the "new terms" contracts unless prices on the latter fall to 5*d.* per cental below those on "old terms" contracts.

The authors are indebted for valuable assistance to F. W. G. Urquhart, Secretary of the Liverpool Corn Trade Association, and to George Ridgway and E. L. Lewis, a director and a past president of the Association, respectively. Each read an early draft of the manuscript and offered much helpful criticism and comment. For unpublished statistics of futures trading in the several markets we are indebted to Mr. Urquhart, to A. E. Darby, Secretary of the Winnipeg Grain Exchange, and J. W. T. Duvel, Chief of the Commodity Exchange Administration of the United States. The price data were compiled chiefly by Adelaide M. Hobe and the charts prepared by P. Stanley King and Pauline S. Armstead.

CHART 3.- PRICES OF LIVERPOOL WHEAT FUTURES, WEEKLY, MAY 1886 - AUGUST 1914.

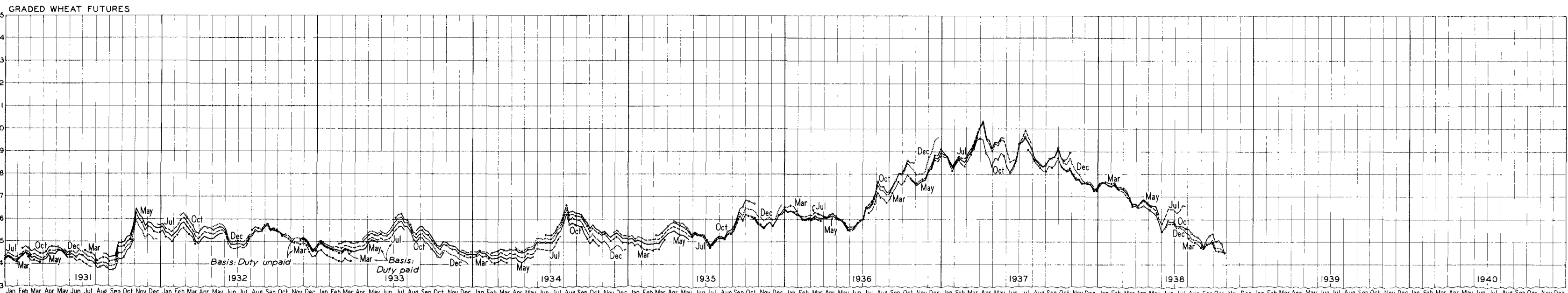
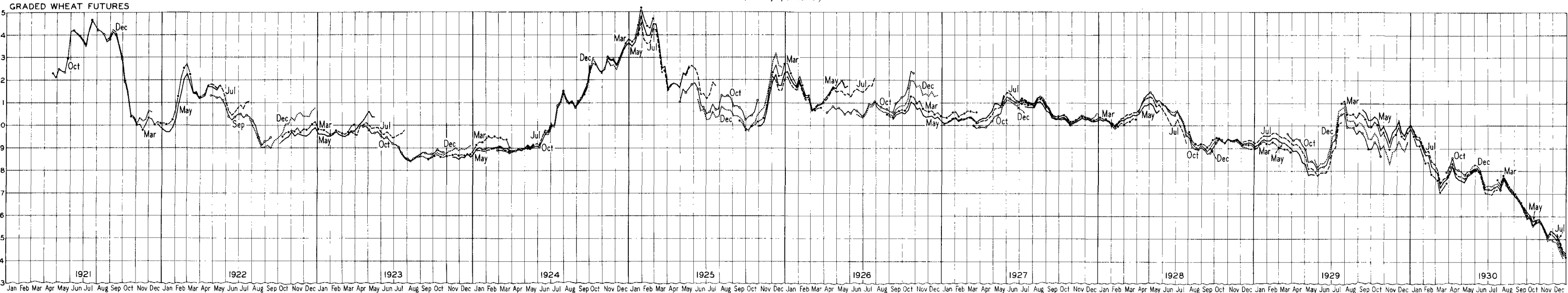
(Shillings per cental)



Weekly averages of daily closing prices, from Tables II and III.

CHART 4. - PRICES OF LIVERPOOL WHEAT FUTURES, WEEKLY, AUGUST 1921 - OCTOBER 1938.

(Shillings per cental)



Weekly averages of daily closing prices, from Table IV.

APPENDIX NOTES

A. ORIGINAL FUTURE DELIVERY CONTRACT FOR GRADED WHEAT

The contract forms used for recording purchases and sales of wheat for future delivery at Liverpool, since 1903 at least, have stated the terms of the contract in considerable detail. The buyer fills out one form, the seller another. There are minor differences in wording between forms used by members buying or selling in their own names, and forms used by brokers buying or selling in the names of other members. Below is given the text of a contract of *purchase* by a *broker* under the terms of the original graded wheat contract adopted April 15, 1903.¹

[Face]

THE LIVERPOOL CORN TRADE ASSOCIATION,
LIMITED

No. 34b—FUTURE DELIVERY CONTRACT—Red Wheat
(Liverpool Grade). Broker's Contract.

Liverpool,190...
We have this day BOUGHT from.....
on your account, on the terms of the Printed Rules of
the LIVERPOOL CORN TRADE ASSOCIATION, LIMITED,
.....say about..... Centals
Red Wheat of any of the Grades and subject to the
scale of allowances adopted by the Liverpool Corn
Trade Association, Limited, as endorsed hereon, at
.....per 100 lbs. to be delivered during
.....ex store in Liverpool, or, at Sellers'
option, in Birkenhead at an allowance to the Buyers
of one farthing per Cental.

The Certificate of the Grading Committee shall be
final as to grade and shall accompany the tender of the
goods.

The Wheat at time of tender to be in fair merchant-
able condition (a slight dry warmth not to be objected
to.)

Payment—as per Rule 8, allowing interest equal to
three months from date of being ready for delivery.

*This Contract is made between yourselves and
.....and not by or with any person,
whether disclosed or not, on whose instructions or for
whose benefit the same may have been entered into.*
Brokerage.....per cent. to be paid by.....

Adopted 15th April, 1903.
Entered at Stationers' Hall and
sold only at the Offices of the
Association.

[Endorsement]

This Contract was made on the date specified, and
within the business hours fixed by the Liverpool Corn
Trade Association, Limited.

It is agreed that if the rate of duty chargeable on
Grain be increased or decreased at any time before
tender is made under this contract, the amount of
such increase or decrease shall be added to or deducted
from the contract price, as the case may be.

¹ Reproduced from typewritten copy furnished by
the Secretary of the Liverpool Corn Trade Association.
A copy of a member's contract was published in the
Corn Trade News, April 16, 1903, p. 1021.

[Back]

GRADES OF WHEAT

GRADE A

AMERICAN WHEAT

Spring Wheat, well cleaned, containing not less than
76 per cent of hard grains, and weighing not less
than 61½ lbs.

GRADE B

AMERICAN WHEAT

Spring Wheat. If of the type known as Manitoba, rea-
sonably clean, containing not less than 60 per cent
of hard grains, and weighing not less than 60½ lbs.

If of the type known as Northern (grown in the
United States), reasonably clean, containing not
less than 50 per cent hard grains, and weighing not
less than 59 lbs.

Any other type of Spring Wheat (grown in the
United States), reasonably clean, and weighing not
less than 60 lbs.

Choice Winter Wheat, well cleaned, free from garlic,
and weighing not less than 62½ lbs.

ARGENTINE WHEAT

Rosario—Santa Fe Type, reasonably clean, and weigh-
ing not less than 62 lbs.

Bahia Blanca Type, reasonably clean, and weighing
not less than 64 lbs.

GRADE C

AMERICAN WHEAT

Spring Wheat. If of the type known as Manitoba, rea-
sonably clean, containing not less than 50 per cent
of hard grains and weighing not less than 59 lbs.

If of the type known as Northern (grown in the
United States), reasonably clean, containing not less
than 40 per cent of hard grains and weighing not
less than 58 lbs.

Any other type of Spring Wheat, reasonably clean
and weighing not less than 59 lbs.

Soft Winter Wheat, reasonably clean and reasonably
free from garlic, and weighing not less than 60 lbs.

Hard Winter Wheat, reasonably clean and weighing
not less than 61 lbs.

ARGENTINE WHEAT

Rosario—Santa Fe Type, reasonably clean, and weigh-
ing not less than 60 lbs.

Bahia Blanca Type, reasonably clean and weighing not
less than 61½ lbs.

GRADE D

ARGENTINE WHEAT

Rosario—Santa Fe Type, reasonably clean, and weigh-
ing not less than 58½ lbs.

WHEAT OF GRADE A is tenderable at Contract price
WHEAT OF GRADE B is tenderable with an allowance
to buyer of 2d. per cental.

WHEAT OF GRADE C is tenderable with an allowance
to buyer of 4d. per cental.

WHEAT OF GRADE D is tenderable with an allowance
to buyer of 5½d. per cental.

WHEAT at time of Grading must weigh per imperial
bushel as hereinbefore provided.

AMERICAN WHEAT must be Wheat grown East of
the Rocky Mountains in the United States of North
America and/or Canada except where otherwise
provided.

The definitions (on the contract forms) of the four grades of wheat established under the original graded wheat contract were supplemented by grading rules adopted at the same time, as follows:

No wheat shall be graded which, in the opinion of the Committee, has any defect which would render it unsuitable for general milling purposes.

Grade A shall be practically free from frosted, sprouted, and heated grains, and entirely free from smut.

Grade B shall be reasonably free from smut and frosted, sprouted or heated grains, but the word "rea-

sonably" shall not be construed as admitting more than occasional smutted, frosted, sprouted or heated grains.

Grade C—When the minimum weight for each description is barely exceeded, only occasional smutted, frosted, sprouted or heated grains shall be admitted, but in proportion to the improvement in weight and other requirements, a somewhat larger quantity of smutted, frosted, sprouted or heated grains may be admitted.

Grade D shall be judged on similar definitions to those of Grade C, but the causes leading to inferiority in weight shall be taken into consideration.¹

B. PRESENT FUTURE DELIVERY CONTRACT

Below is shown the text of one of the contract forms used at Liverpool since 1934 for recording purchases and sales of wheat for future delivery. This differs from the form shown above not only in the terms of the contract, but also in the respects that it is a form used by the *seller* in a transaction between members making the contract in their own names.

[Face]

THE LIVERPOOL CORN TRADE ASSOCIATION, LIMITED

FUTURE DELIVERY CONTRACT—WHEAT

Liverpool.....19....

We have this day SOLD to.....
on the terms of the Printed Rules of the LIVERPOOL CORN TRADE ASSOCIATION, LIMITED.....Load(s), say.....Load(s), Wheat at..... per 100 lbs. (each Load representing about 4,800 Centals), as endorsed hereon, subject to mutual allowances for superiority or inferiority as fixed by the Grading Committee, but not exceeding threepence per cental for superiority or one penny per cental for inferiority, to be delivered during....., ex store in Liverpool, or, at Seller's option, ex the Grain Stores of the Manchester Ship Canal Company at the Manchester Docks, or ex store in Birkenhead and, if in Birkenhead, then at an allowance to the Buyer of one halfpenny per Cental.

The Certificate of the Grading Committee shall accompany the tender of the Goods, and as between Buyer and Seller shall be final as to grade, and as between them shall not be affected by the result of any review of the Certificate under the provisions of the Bye-Laws as to grading.

The Wheat at time of tender to be in fair merchantable condition (a slight dry warmth not to be objected to).

In the case of Wheat tendered in Liverpool or Birkenhead payment shall be made within two business days from the date of tender, and in the case of Wheat tendered in Manchester within three business days thereof, by nett cash, or by deposit made in accordance with the Clearing House Regulations, in exchange for a transfer order or orders.

This Contract is made between yourselves and ourselves and not by or with any person, whether disclosed or not, on whose instructions or for whose benefit the same may have been entered into.

In force for deliveries on and after
1st March, 1934. Copyright.
Sold only at the Offices of the
Association.

[Endorsement]

This Contract was made on the date specified, and within the business hours fixed by the Liverpool Corn Trade Association, Limited.

[Back]

AMERICAN RED WHEAT.

SPRING WHEAT. If of the type known as Manitoba, basis of weight 60 lbs.

If of the type known as Northern (grown in the United States), basis of weight 60 lbs.

Any other type of Spring Wheat, basis of weight 60 lbs.

SOFT WINTER WHEAT, free from garlic, basis of weight 61 lbs.

HARD WINTER WHEAT, basis of weight, 60½ lbs.

ARGENTINE WHEAT.

Basis of weight 60½ lbs.

AUSTRALIAN WHEAT.

Basis of weight 60½ lbs.

No Wheat shall be graded which, in the opinion of the Grading Committee, has any defect which would render it unsuitable for general milling purposes.

Subject always to this proviso, basis Wheat may contain some heated, sprouted, frosted, and/or smutted grains, and a proportionately increased quantity may be allowed if warranted by an improvement in weight or in other respects.

No Wheat weighing more than one pound per imperial bushel under the basis weight shall be graded.

No Wheat which complies with the weight requirements shall be rejected on account of the presence of heated, sprouted, frosted and/or smutted grains or other defects if, in the opinion of the Grading Committee, it is not more than one penny per cental inferior to basis quality.

The allowances, if any, shall be in gradations of not less than one halfpenny per cental.

The basis of weight as hereinbefore provided is per imperial bushel at time of grading.

Spring Wheats must be reasonably hard of their respective types, and all descriptions of Wheat must be reasonably clean of their respective types.

American Red Wheat must be Wheat grown East of the Rocky Mountains in the United States of North America and/or Canada, except where otherwise provided.

¹ *Corn Trade News*, April 17, 1903, p. 1031.

APPENDIX TABLES

TABLE I.—PRICES OF LIVERPOOL WHEAT FUTURES, MONTHLY, 1886-1938*
(Shillings and pence per 100 lbs.)

A. CALIFORNIAN WHEAT FUTURES*

Month	1886					1887					1888				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.						7 9.0	7 10.4				6 11.8	7 1.4			
Feb.						7 6.5	7 7.9	7 7.9			6 9.0	6 10.2			
Mar.						7 9.0	7 10.8	7 11.5			6 8.2	6 9.4	6 9.6		
Apr.							7 11.8	8 .9				6 8.9	6 9.2		
May							8 1.9	8 3.0				6 10.2	6 10.6	7 .0	
June			6 8.9					8 .3					6 7.9	6 9.4	
July			6 7.1	6 9.4	6 10.2			7 3.6	7 5.3				6 9.2	6 10.6	6 11.2
Aug.				6 11.0	7 .2				8 9.4					7 8.0	7 8.8
Sept.				6 11.2	7 .7				6 1.2	6 3.4				8 .2	8 .7
Oct.				6 9.9	6 11.0				6 8.8	6 5.2				8 4.2	8 5.2
Nov.	7 1.8				7 .6	6 10.4				6 8.2	8 4.8				8 4.1
Dec.	7 8.1	7 8.9			7 6.8	7 .5	7 1.6			6 10.0	7 11.9				7 11.0

Month	1889					1890					1891				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.	7 9.2	7 9.5				7 2.9	7 2.1				7 9.5	7 8.5			
Feb.	7 9.1	7 8.9	7 8.5			7 2.6	7 1.6	7 1.4			7 9.8	7 9.1	7 7.7		
Mar.	7 7.6	7 7.8	7 6.5			7 2.3	7 1.2	7 .9	7 1.1		8 2.9	8 2.8	8 1.5		
Apr.		7 2.0	7 1.7				7 .7	7 .6	7 1.3			8 8.0	8 7.6	8 7.1	
May		6 11.1	6 11.1	6 11.0			7 2.0	7 2.4	7 3.4	7 3.4		8 6.2	8 6.5	8 7.0	
June			6 10.8	6 10.2	6 10.8			7 .8	7 2.4	7 2.8			8 8.9	8 5.7	
July			7 2.0	7 2.1	7 2.0			7 3.1	7 4.7	7 5.0			8 .1	8 1.4	
Aug.				7 1.8	7 1.8				7 7.8	7 8.6				8 9.6	8 8.8
Sept.				7 1.6	7 .6				7 4.7	7 6.1				8 9.0	8 9.7
Oct.	7 2.0			7 3.8	7 2.8	7 6.6	7 6.5		7 5.5	7 6.6	8 9.8			8 8.6	8 9.7
Nov.	7 1.5				7 2.2	7 6.6	7 6.1			7 7.0	9 .7				9 .0
Dec.	7 2.2	7 1.6			7 3.6	7 7.1	7 6.8			7 6.6	8 10.0				8 9.1

B. "AMERICAN RED" AND "GRADED RED" WHEAT FUTURES*

Month	1891					1892					1893				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.						8 .2	8 .2				6 .8	6 2.8			
Feb.						7 10.0	7 9.6				5 10.1	6 .4			
Mar.						7 9.7	7 7.5	7 6.4			5 6.7	5 8.1	5 9.5		
Apr.							7 1.8	7 .6				5 9.0	5 10.6		
May							6 10.6	6 11.8				5 9.6	5 11.2	6 2.1	
June								6 9.0					5 8.5	5 11.5	
July								6 7.2	6 8.2	6 8.6			5 8.8	5 11.2	6 1.2
Aug.									6 4.6	6 5.7				5 7.2	5 9.4
Sept.				7 11.6	8 1.0				6 .5	6 2.5				5 6.6	5 8.9
Oct.	8 6.0			8 8.3	8 4.3				6 .7	6 2.2				5 4.2	5 6.2
Nov.	8 8.8				8 7.5	6 1.7	6 3.3			5 10.6	5 6.2	5 8.1			5 3.5
Dec.	8 6.4	8 6.7			8 4.5	5 10.9	6 .8			5 8.2	5 5.6	5 7.0			5 2.8

Month	1894					1895					1896				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.	5 2.6	5 4.1				4 8.7	4 9.4				5 6.3	5 6.6			
Feb.	4 10.3	4 11.4	5 .5			4 6.7	4 7.4	4 8.0			5 8.4	5 8.4	5 8.5		
Mar.	4 9.4	4 10.0	4 10.7			4 8.6	4 9.2	4 9.5			5 5.5	5 5.9	5 6.0		
Apr.		4 10.5	4 10.8		5 1.4		4 11.2	4 11.6	5 .6			5 6.2	5 6.3	5 6.6	
May		4 5.6	4 5.7	4 6.4	4 7.8		5 5.0	5 6.0	5 7.4			5 2.7	5 3.1	5 3.4	
June			4 6.5	4 8.2	4 9.5			5 8.4	5 9.8	5 10.6			4 11.2	4 11.2	
July			4 5.4	4 6.6	4 8.0			5 3.6	5 5.0	5 6.2			4 10.4	4 10.5	4 11.2
Aug.				4 5.1	4 7.1				6 3.6	5 4.6				4 11.7	5 .5
Sept.		4 8.9		4 3.9	4 5.6	5 1.4			4 10.8	4 11.8				5 4.4	5 4.8
Oct.	4 5.6	4 6.9		4 2.8	4 4.1	5 5.3			5 2.8	5 2.9			6 3.1	6 2.8	6 2.7
Nov.	4 9.9	4 10.3			4 9.2	5 4.1	5 4.9			5 2.7	6 9.9	6 9.6			6 9.8
Dec.	4 11.0	4 11.6			4 10.0	5 4.4	5 5.1			5 2.5	6 9.4	6 9.2			

* Averages of daily closing prices on all trading days of each month; sources as indicated for corresponding periods in Tables II, III, and IV. When regular trading in one future continued through less than a full month, as many as three missing quotations have been supplied by interpolation to obtain an average for the month (interpolation on basis of quotations for adjacent future, assuming constant spread). In the early years, there was trading in many delivery months not here represented (see p. 145).

* Trading continued into October 1896, but this future dropped to minor importance after 1891.

* "American Red," 1891-1903; "Graded Red" from 1903.

TABLE I.—Continued
B. "AMERICAN RED" AND "GRADED RED" WHEAT FUTURES (Continued)

Month	1897					1898					1899				
	Mar.	May	July	Sept.	Dec.	Mar.	May	July	Sept.	Dec.	Mar.	May	July	Sept.	Dec.
Jan.	6 9.4	6 9.6	6 8.2	.....	.....	7 4.7	7 2.1	6 11.3	6 5.8	.....	5 10.5	5 9.0	.....	.....	.....
Feb.	6 3.6	6 4.7	6 4.0	.....	.....	7 10.7	7 5.6	7 2.1	6 6.9	.....	5 8.2	5 7.9	.....	.....	.....
Mar.	6 1.4	6 2.8	6 2.8	.....	.....	7 10.1	7 5.1	7 1.1	6 6.7	6 6.0	5 5.5	5 5.6	5 5.3	.....	.....
Apr.	.....	5 10.8	5 10.9	5 10.1	.....	.....	8 2.6	7 11.2	7 .8	6 9.7	.....	5 6.9	5 6.8	.....	.....
May	.....	5 10.6	5 10.8	5 9.8	.....	.....	.....	10 4.8	7 10.9	7 2.1	.....	5 8.2	5 8.2	5 7.8	.....
June	.....	.....	5 8.4	5 6.8	5 7.4	.....	.....	7 8.5	6 4.0	6 1.2	.....	5 11.2	6 .8	.....	.....
July	.....	.....	6 2.6	5 10.2	6 10.0	.....	.....	6 7.4	5 10.8	5 7.9	.....	5 7.8	5 10.3	5 11.7	.....
Aug.	.....	.....	.....	7 1.6	6 11.9	.....	.....	.....	5 8.6	5 4.8	.....	.....	5 9.7	5 11.4	.....
Sept.	.....	.....	.....	7 11.0	7 7.8	.....	.....	.....	5 9.0	5 4.1	6 1.4	.....	5 9.6	5 11.6	.....
Oct.	.....	7 3.2	.....	.....	7 5.1	5 9.4	.....	.....	.....	5 10.6	6 1.9	6 2.2	.....	6 .8	.....
Nov.	7 6.0	7 4.2	.....	.....	7 5.7	5 10.5	.....	.....	.....	6 1.1	5 10.5	5 10.9	.....	5 9.1	.....
Dec.	7 4.9	7 3.7	.....	.....	7 5.2	5 9.6	.....	.....	.....	5 11.5	5 10.1	5 10.1	.....	.....	.....

Month	1900					1901					1902				
	Mar.	May	July	Sept.	Dec.	Mar.	May	July	Sept.	Dec.	Mar.	May	July	Sept. ^c	Dec. ^c
Jan.	5 9.5	5 9.2	.....	.....	.....	6 1.7	6 2.0	.....	.....	.....	6 2.6	6 3.0	.....	.....	.....
Feb.	5 10.0	5 9.8	5 9.9	.....	.....	5 11.5	6 .1	6 .4	.....	.....	6 1.5	6 1.7	.....	.....	.....
Mar.	.....	5 9.3	5 8.7	.....	.....	.....	6 .3	6 .3	.....	.....	6 1.4	6 .5	6 .1	.....	.....
Apr.	.....	5 9.9	5 9.4	.....	.....	.....	5 10.1	5 10.4	.....	.....	.....	6 .3	5 11.5	.....	.....
May	.....	.....	5 8.4	5 8.4	.....	.....	.....	5 10.9	5 10.3	.....	.....	6 .9	6 1.0	6 2.8	.....
June	.....	.....	6 1.7	6 2.3	.....	.....	.....	5 8.9	5 8.5	.....	.....	5 10.8	6 1.3	.....	.....
July	.....	.....	.....	6 2.1	.....	.....	.....	.....	5 6.7	5 7.7	.....	.....	6 2.1	.....	.....
Aug.	.....	.....	.....	6 .2	6 1.7	.....	.....	.....	5 7.6	5 9.2	.....	.....	5 11.6	5 10.4	.....
Sept.	.....	.....	.....	6 1.2	6 3.4	.....	.....	.....	.....	5 7.8	.....	.....	5 10.9	5 10.4	.....
Oct.	.....	.....	.....	.....	6 1.5	5 9.2	.....	.....	.....	5 7.8	5 10.7	.....	.....	5 10.2	.....
Nov.	6 1.0	.....	.....	.....	5 11.7	6 10.9	5 11.6	.....	.....	5 9.3	5 11.6	.....	.....	5 10.5	.....
Dec.	6 .4	.....	.....	.....	.....	6 2.0	6 2.7	.....	.....	6 1.0	6 1.1	6 .7	.....	6 .8	.....

Month	1903					1904					1905				
	Mar. ^c	May ^c	July ^c	Sept. ^d	Dec. ^d	Mar.	May	July	Sept.	Dec.	Mar.	May	July	Sept.	Dec.
Jan.	6 2.8	6 1.6	.....	.....	.....	6 4.7	6 4.0	.....	.....	.....	7 1.0	7 .2	7 .2	.....	.....
Feb.	6 3.6	6 2.2	.....	.....	.....	6 7.4	6 6.4	.....	.....	.....	7 .6	6 11.7	6 11.7	.....	.....
Mar.	.....	6 1.6	6 1.1	.....	.....	.....	6 7.9	6 7.6	.....	.....	.....	6 8.9	6 9.3	.....	.....
Apr.	.....	6 2.5	6 2.8	.....	.....	.....	6 5.1	6 5.6	.....	.....	.....	6 6.8	6 7.2	6 6.2	.....
May	.....	.....	6 3.9	6 1.6	.....	.....	.....	6 4.4	.....	.....	.....	.....	6 8.4	6 6.7	.....
June	.....	.....	6 4.1	6 2.7	.....	.....	.....	6 3.2	6 4.0	.....	.....	.....	6 10.1	6 8.6	6 7.7
July	.....	.....	.....	6 3.3	6 3.0	.....	.....	.....	6 7.4	.....	.....	.....	.....	6 9.4	6 8.6
Aug.	.....	.....	.....	6 5.8	6 5.9	.....	.....	.....	7 2.0	7 3.3	.....	.....	.....	6 8.1	6 7.0
Sept.	.....	.....	.....	6 4.7	6 5.6	.....	.....	.....	7 4.4	7 6.6	6 7.8	.....	.....	.....	6 8.2
Oct.	.....	.....	.....	.....	6 5.1	7 7.0	.....	.....	.....	7 5.6	6 10.3	6 9.8	.....	.....	6 10.9
Nov.	6 4.5	6 3.3	.....	.....	6 5.1	7 4.2	7 3.8	.....	.....	7 2.4	7 .1	6 11.0	.....	.....	7 .0
Dec.	6 4.4	6 3.4	.....	.....	.....	7 2.6	7 2.7	.....	.....	.....	6 11.6	6 10.2	.....	.....	.....

Month	1906					1907					1908				
	Mar.	May	July	Sept.	Dec.	Mar.	May	July ^c	Sept.	Dec.	Mar.	May	July	Sept.	Dec.
Jan.	6 11.7	6 9.9	.....	.....	.....	6 4.6	6 3.8	6 .6	.....	.....	7 10.2	7 9.7	.....	.....	.....
Feb.	6 9.4	6 7.6	6 7.3	.....	.....	6 6.5	6 5.8	6 2.9	.....	.....	7 1.6	7 2.0	7 3.2	.....	.....
Mar.	.....	6 6.1	6 5.9	.....	.....	.....	6 5.1	6 2.3	.....	.....	.....	7 .6	7 2.1	.....	.....
Apr.	.....	6 8.4	6 7.3	6 7.0	.....	.....	6 5.4	6 8.5	.....	.....	.....	7 .9	7 2.4	6 11.7	.....
May	.....	.....	6 7.2	6 6.9	.....	.....	.....	6 10.5	6 11.9	.....	.....	.....	7 6.9	7 2.6	.....
June	.....	.....	6 7.1	6 7.7	6 7.6	.....	.....	6 11.9	7 1.9	.....	.....	.....	7 2.7	6 11.7	6 11.0
July	.....	.....	6 7.1	6 6.7	6 7.2	.....	.....	7 2.1	7 3.7	7 5.8	.....	.....	.....	7 2.9	7 2.7
Aug.	.....	.....	.....	6 2.9	6 4.3	7 5.7	.....	.....	7 2.7	7 5.1	.....	.....	.....	7 4.8	7 5.4
Sept.	.....	.....	.....	6 1.9	6 3.4	8 .0	.....	.....	7 8.6	7 10.9	.....	.....	.....	7 7.5	7 7.6
Oct.	6 5.6	.....	.....	.....	6 5.1	8 6.0	8 5.3	.....	.....	8 5.0	7 6.1	7 5.6	.....	.....	7 8.3
Nov.	6 5.6	6 5.0	.....	.....	6 4.3	8 2.6	8 1.9	.....	.....	8 .0	7 8.8	7 8.3	.....	.....	7 10.9
Dec.	6 5.3	6 4.6	.....	.....	.....	7 11.2	7 10.5	.....	.....	.....	7 7.9	7 7.2	.....	.....	7 11.7

^c Including duty of 3d. per 112 lbs. on contracts expiring Aug. 1, 1902—July 31, 1903.

^d These and later futures, ex-duty and basis "Grade A"; July, 1903 contracts were traded on "Grade A" basis as well

as on "American Red" basis, here shown, but both duty paid (see pp. 145, 148-49).

^e July 1907 and later contracts, basis "new contract" (see pp. 147-48).

TABLE I.—Continued

B. "AMERICAN RED" AND "GRADED RED" WHEAT FUTURES (Continued)

Month	1909					1910					1911				
	Mar.	May	July	Sept.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.	7 7.4	7 6.6	.....	.....	.....	8 3.8	8 1.8	.....	.....	.....	7 1.2	7 1.4	.....	.....	.....
Feb.	7 11.4	7 10.7	7 11.3	.....	.....	8 1.7	7 11.6	7 10.5	.....	.....	6 11.8	6 11.0	.....	.....	.....
Mar.	8 2.8	8 2.8	8 8.6	7 10.8	.....	8 2.3	7 11.2	7 10.8	.....	.....	6 8.4	6 8.7	.....	.....	.....
Apr.	.....	8 9.4	8 10.9	8 4.3	.....	.....	7 8.8	7 8.8	7 7.0	.....	.....	6 8.8	6 8.4	6 8.0	.....
May	.....	9 .2	9 .4	8 5.5	8 8.7	.....	6 10.3	6 10.8	7 .1	.....	.....	6 11.1	6 10.6	6 8.8	.....
June	.....	.....	9 .5	8 6.6	8 4.5	.....	.....	6 5.9	6 7.7	.....	.....	.....	6 9.9	6 8.4	.....
July	.....	.....	9 5.2	8 7.1	8 4.2	.....	.....	7 1.8	7 8.3	7 4.3	.....	.....	6 11.2	6 9.5	6 10.1
Aug.	7 7.2	7 7.2	.....	8 1.1	7 7.6	.....	.....	.....	7 6.8	7 7.8	.....	.....	.....	7 1.3	7 2.6
Sept.	7 6.7	7 6.4	.....	7 7.7	7 6.2	7 5.6	.....	.....	7 4.4	7 5.1	7 5.6	.....	.....	7 3.8	7 5.2
Oct.	7 8.2	7 7.7	.....	7 9.1	7 3.2	.....	.....	.....	7 2.5	7 3.0	7 5.4	7 5.1	.....	7 5.2	7 5.8
Nov.	7 8.3	7 7.1	.....	7 11.8	7 .6	.....	.....	.....	.....	6 10.9	7 1.9	7 1.2	.....	.....	7 2.5
Dec.	7 10.5	7 8.8	.....	.....	8 1.8	6 11.9	7 .5	.....	.....	6 9.8	7 3.4	7 2.2	.....	.....	7 4.1

Month	1912					1913					1914				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.	7 7.0	7 5.0	7 5.2	.....	.....	7 5.3	7 3.0	7 2.7	.....	.....	7 2.4	7 1.6	7 1.7	.....	.....
Feb.	7 10.1	7 5.6	7 5.1	.....	.....	7 5.8	7 3.5	7 3.1	.....	.....	7 3.4	7 3.2	7 3.2	.....	.....
Mar.	8 1.3	7 7.4	7 6.1	.....	.....	7 6.3	7 3.5	7 2.6	7 2.1	.....	7 3.0	7 3.0	7 2.8	.....	.....
Apr.	.....	7 11.7	7 9.8	7 7.1	.....	.....	7 6.9	7 5.0	7 3.8	.....	.....	7 1.8	7 2.1	7 .8	.....
May	.....	7 10.6	7 7.9	7 6.3	.....	.....	7 6.8	7 5.4	7 3.4	.....	.....	.....	7 3.6	7 1.1	.....
June	.....	.....	7 8.5	7 6.0	7 5.6	.....	.....	7 5.6	7 3.7	7 4.1	.....	.....	7 1.2	6 11.1	.....
July	.....	.....	7 7.3	7 3.2	7 2.2	.....	.....	7 5.4	7 3.4	7 3.9	.....	.....	.....	6 11.1	7 .2
Aug.	.....	.....	.....	7 5.7	7 3.8	.....	.....	.....	7 1.7	7 1.7	.....	.....	.....	.....	.....
Sept.	.....	.....	.....	7 8.0	7 4.8	.....	.....	.....	7 1.8	7 1.7	.....	.....	.....	.....	.....
Oct.	7 7.1	.....	.....	7 10.0	7 8.6	7 .7	7 .4	.....	.....	6 11.5	.....	.....	.....	.....	.....
Nov.	7 4.8	7 3.4	.....	.....	7 4.9	7 2.1	7 1.8	.....	.....	7 .7	.....	.....	.....	.....	.....
Dec.	7 3.6	7 2.1	.....	.....	7 4.0	7 2.0	7 1.4	.....	.....	.....	.....	.....	.....	.....	.....

C. "GRADED" WHEAT FUTURES¹

Month	1921					1922					1923				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Sept.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.	.....	.....	.....	.....	.....	10 1.9	9 9.7	.....	.....	.....	9 9.2	9 6.9	.....	.....	.....
Feb.	.....	.....	.....	.....	.....	11 10.2	11 4.4	.....	.....	.....	9 8.1	9 7.3	.....	.....	.....
Mar.	.....	.....	.....	.....	.....	.....	11 7.1	.....	.....	.....	9 9.6	9 7.5	.....	.....	.....
Apr.	.....	.....	.....	.....	.....	.....	11 5.8	11 6.8	.....	.....	.....	10 1.8	9 11.7	.....	.....
May	.....	.....	.....	12 8.7	.....	.....	11 6.8	11 7.3	11 2.1	.....	.....	.....	9 10.6	9 8.1	.....
June	.....	.....	.....	14 1.1	.....	.....	.....	10 7.8	10 4.8	.....	.....	.....	9 7.0	9 4.2	.....
July	.....	.....	.....	14 2.5	.....	.....	.....	10 10.5	10 4.9	.....	.....	.....	9 7.9	8 10.3	8 9.8
Aug.	.....	.....	.....	13 11.8	.....	.....	.....	.....	9 7.1	9 4.8	.....	.....	.....	8 6.6	8 6.3
Sept.	.....	.....	.....	13 8.2	13 9.8	.....	.....	.....	9 7.8	9 2.4	.....	.....	.....	8 9.0	8 6.9
Oct.	11 .9	.....	.....	.....	11 1.1	9 7.0	9 4.5	.....	.....	9 9.9	8 7.6	.....	.....	8 9.9	8 8.7
Nov.	10 .1	.....	.....	.....	10 3.0	9 9.8	9 6.8	.....	.....	10 4.8	8 8.1	.....	.....	.....	8 10.8
Dec.	10 2.0	.....	.....	.....	.....	9 11.1	9 8.1	.....	.....	10 6.3	8 8.8	8 6.8	.....	.....	8 11.8

Month	1924					1925					1926				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.	9 2.3	8 10.8	8 9.9	.....	.....	14 3.0	14 .0	.....	.....	.....	12 2.5	11 11.7	11 9.4	.....	.....
Feb.	9 5.6	9 .1	8 11.4	.....	.....	14 6.2	14 2.3	13 9.3	.....	.....	11 7.7	11 5.9	11 4.8	.....	.....
Mar.	9 3.5	8 11.7	8 10.9	8 10.0	.....	.....	13 2.3	12 11.8	.....	.....	10 8.8	10 10.1	10 10.0	.....	.....
Apr.	.....	8 10.6	8 10.8	8 10.8	.....	.....	11 8.3	11 8.1	.....	.....	.....	11 6.0	11 5.0	10 8.4	.....
May	.....	9 1.6	9 1.0	9 .2	.....	.....	12 4.9	12 4.4	11 7.1	.....	.....	11 9.2	11 5.2	10 7.7	.....
June	.....	.....	9 6.8	9 5.9	.....	.....	.....	11 9.7	11 2.6	.....	.....	.....	11 5.7	10 7.0	.....
July	.....	.....	.....	10 8.0	10 7.0	.....	.....	11 7.8	10 8.3	10 4.5	.....	.....	11 9.0	10 9.9	10 8.8
Aug.	.....	.....	.....	10 11.9	10 11.8	.....	.....	.....	11 3.2	10 8.5	.....	.....	.....	10 9.2	10 7.3
Sept.	11 4.6	.....	.....	11 5.2	11 4.4	.....	.....	.....	10 8.8	10 3.7	10 6.1	10 4.9	.....	10 10.4	10 7.6
Oct.	12 6.8	.....	.....	.....	12 7.4	9 11.8	.....	.....	10 7.1	10 .8	10 11.8	10 9.4	.....	11 10.2	11 5.4
Nov.	12 9.6	.....	.....	.....	12 8.0	10 9.6	10 6.6	.....	.....	11 2.7	10 10.1	10 6.6	.....	.....	11 6.2
Dec.	13 2.1	12 1.0	.....	.....	.....	13 5.3	12 .4	11 9.7	.....	.....	10 6.7	10 4.1	.....	.....	11 3.8

¹ The Liverpool future deserved technically to be called merely a "Graded" rather than a "Graded Red" wheat future from 1910, when Australian wheat was made tenderable on futures contracts. The term "red" was not dropped

from the designation, nor were tenders of Australian wheat large enough to make the older designation inappropriate in fact, until after 1914 (see text, p. 148, and note a to tabulation, p. 144).

TABLE I.—Concluded
C. "GRADED" WHEAT FUTURES (Continued)

Month	1927					1928					1929				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.....	10 5.1	10 1.9	10 2.1	.....	.....	10 3.0	10 2.5	10 2.7	.....	.....	9 1.8	9 2.8	9 4.8	.....	.....
Feb.....	10 5.9	10 3.0	10 3.4	.....	.....	9 11.8	10 1.0	10 2.0	.....	.....	9 2.2	9 4.7	9 7.3	.....	.....
Mar.....	10 7.6	10 3.3	10 2.8	.....	.....	10 2.5	10 4.6	10 6.2	.....	.....	8 11.1	9 2.0	9 4.9	.....	.....
Apr.....	.....	10 5.0	10 3.4	10 .2	.....	.....	10 9.4	11 .4	11 1.2	.....	.....	8 3.1	9 .0	9 3.5	.....
May.....	.....	11 .9	10 11.8	10 7.9	.....	.....	10 8.8	10 11.9	11 2.3	.....	.....	7 10.4	8 1.3	8 4.9	.....
June.....	.....	.....	11 2.7	11 1.0	10 11.7	.....	.....	10 2.8	10 7.7	10 8.4	.....	.....	7 11.7	8 3.4	8 5.8
July.....	10 10.9	.....	11 .9	11 .5	10 11.9	.....	.....	9 8.7	10 1.1	10 2.2	.....	.....	9 7.5	9 11.6	10 2.5
Aug.....	11 .6	10 11.0	.....	11 1.4	11 1.6	9 3.2	.....	.....	9 .4	9 1.7	10 6.3	.....	.....	9 10.9	10 2.8
Sept.....	10 6.4	10 4.8	.....	10 5.6	10 6.6	9 2.2	.....	.....	8 10.5	9 .3	10 3.5	10 6.7	.....	9 5.1	9 10.0
Oct.....	10 4.2	10 3.0	.....	10 2.2	10 4.1	9 4.1	9 4.3	.....	.....	9 4.0	9 10.6	10 1.9	.....	8 11.7	9 4.1
Nov.....	10 3.6	10 2.5	.....	.....	10 3.6	9 4.0	9 4.2	.....	.....	9 3.5	9 4.8	9 7.9	.....	.....	8 9.0
Dec.....	10 3.4	10 2.9	.....	.....	10 4.6	9 1.8	9 2.5	9 8.8	.....	9 .0	9 8.0	9 10.2	9 10.5	.....	9 1.7

Month	1930					1931					1932				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May*	July	Oct.	Dec.
Jan.....	9 2.7	9 5.6	9 6.7	.....	.....	4 2.6	4 3.2	4 4.8	.....	.....	5 2.7	5 5.2	5 7.1	.....	.....
Feb.....	8 1.4	8 5.5	8 7.8	.....	.....	4 4.4	4 4.7	4 6.2	4 8.3	.....	5 4.9	5 7.6	5 10.1	.....	.....
Mar.....	7 4.6	7 7.2	7 9.0	.....	.....	4 1.5	4 2.9	4 4.4	4 6.6	.....	5 2.2	5 4.2	5 6.6	5 9.0	.....
Apr.....	.....	7 10.3	8 .1	8 2.7	.....	.....	4 4.6	4 6.1	4 8.2	.....	.....	5 1.8	5 4.5	5 7.4	.....
May.....	.....	7 9.2	7 10.2	7 11.6	.....	.....	4 5.9	4 6.3	4 7.4	.....	.....	5 3.6	5 5.4	5 7.4	5 8.9
June.....	.....	.....	7 6.4	7 7.7	7 9.1	.....	.....	4 2.8	4 4.8	4 6.5	.....	.....	4 10.3	5 .3	5 1.6
July.....	.....	.....	7 .9	7 2.8	7 4.4	.....	.....	8 11.1	4 2.2	4 4.2	.....	.....	4 10.2	4 11.7	5 1.2
Aug.....	7 5.1	.....	.....	7 3.3	7 4.1	4 2.9	.....	.....	3 10.4	4 .3	5 7.3	.....	.....	5 5.4	5 5.7
Sept.....	6 7.2	.....	.....	6 6.2	6 6.2	4 4.5	4 6.7	.....	3 11.0	4 1.6	5 7.6	.....	.....	5 7.2	5 6.9
Oct.....	5 9.5	5 11.1	.....	5 9.8	5 9.2	5 .8	5 2.9	.....	4 7.8	4 10.1	5 3.1	.....	.....	5 4.4	5 4.0
Nov.....	5 3.8	5 5.0	.....	.....	5 2.7	5 10.7	6 1.2	.....	.....	5 6.8	4 11.3	.....	.....	.....	5 1.9
Dec.....	4 8.8	4 10.4	.....	.....	.....	5 6.2	5 8.8	.....	.....	5 2.4	4 7.3	4 11.0	.....	.....	4 10.8

Month	1933					1934					1935				
	Mar.	May*	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.....	4 6.2	4 10.5	4 11.6	.....	.....	4 4.5	4 5.8	4 6.9	.....	.....	4 11.0	5 1.2	5 2.9	.....	.....
Feb.....	4 2.5	4 7.8	4 9.2	.....	.....	4 2.0	4 3.8	4 5.5	.....	.....	4 8.0	4 11.2	5 1.4	.....	.....
Mar.....	4 2.1	4 7.6	4 9.4	4 11.8	.....	4 2.0	4 3.8	4 5.8	4 7.8	.....	4 10.1	5 .7	5 2.7	5 4.8	.....
Apr.....	.....	4 8.0	4 10.1	5 .4	.....	.....	4 2.5	4 4.9	4 7.1	.....	.....	5 5.1	5 7.5	5 9.4	.....
May.....	.....	5 .4	5 1.8	5 3.9	5 6.4	.....	4 4.0	4 5.9	4 8.4	4 9.7	.....	5 2.7	5 4.7	5 6.6	5 7.7
June.....	.....	.....	5 1.9	5 4.2	5 5.9	.....	.....	4 8.3	5 .0	5 2.1	5 3.9	.....	5 3.5	5 3.9	5 4.1
July.....	6 1.4	.....	5 7.1	5 9.5	5 11.6	5 7.2	.....	4 11.9	5 3.1	5 5.4	5 .1	.....	4 11.9	5 .4	4 11.9
Aug.....	5 7.0	.....	.....	5 3.1	5 6.1	6 3.7	.....	.....	5 10.8	6 1.6	5 3.2	.....	.....	5 4.4	5 3.4
Sept.....	5 4.2	5 6.1	.....	4 11.6	5 2.0	5 11.8	6 1.2	.....	5 5.9	5 9.1	5 10.5	.....	.....	6 2.5	6 .3
Oct.....	4 9.3	4 11.3	.....	4 5.3	4 7.0	5 5.6	5 7.3	.....	4 11.4	5 2.1	6 1.3	.....	.....	6 9.1	6 5.0
Nov.....	4 8.5	4 10.0	.....	.....	4 5.3	5 2.5	5 4.3	.....	.....	4 10.2	5 9.4	5 9.1	.....	.....	6 .8
Dec.....	4 4.4	4 6.0	4 7.3	.....	4 1.6	5 1.1	5 3.3	5 4.6	.....	4 8.9	6 .8	6 .4	.....	.....	6 3.6

Month	1936					1937					1938				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Jan.....	6 6.6	6 4.2	6 4.2	.....	.....	8 7.2	8 7.6	8 7.5	.....	.....	7 7.4	7 7.1	7 7.2	.....	.....
Feb.....	6 .8	6 .9	6 2.1	.....	.....	8 5.9	8 7.5	8 8.6	.....	.....	7 6.8	7 5.6	7 5.0	.....	.....
Mar.....	6 .0	6 1.2	6 2.9	.....	.....	9 .9	9 2.9	9 4.4	.....	.....	7 .1	7 .0	6 11.0	.....	.....
Apr.....	.....	6 1.3	6 2.4	6 2.1	.....	.....	9 3.8	9 7.6	8 11.8	.....	.....	6 9.1	6 8.6	6 6.8	.....
May.....	.....	5 10.6	5 11.0	5 10.3	.....	.....	9 6.1	9 4.8	8 9.4	.....	.....	6 5.6	6 4.1	6 1.9	.....
June.....	.....	.....	5 9.7	5 9.3	5 8.7	.....	.....	8 9.2	8 5.5	.....	.....	.....	6 4.0	5 9.9	5 9.1
July.....	.....	.....	6 8.0	6 7.3	6 6.6	.....	.....	9 7.8	9 5.2	9 5.0	.....	.....	6 5.8	5 8.6	5 7.0
Aug.....	6 11.4	.....	.....	7 5.1	7 3.3	8 4.3	.....	.....	8 5.9	8 6.4	5 .2	.....	.....	5 4.4	5 1.9
Sept.....	7 3.8	.....	.....	7 8.2	7 7.8	8 4.7	.....	.....	8 9.1	8 9.0	4 10.4	.....	.....	5 1.8	4 11.4
Oct.....	7 9.2	.....	.....	8 5.1	8 3.1	8 3.8	8 3.3	.....	8 10.0	8 7.9	4 7.8	.....	.....	4 10.8	4 8.0
Nov.....	7 8.7	7 8.0	.....	.....	8 .6	7 9.8	7 9.2	.....	.....	8 .6	.....	.....	.....	.....	.....
Dec.....	8 7.8	8 6.4	.....	.....	9 4.4	7 5.8	7 6.1	.....	.....	7 7.6	.....	.....	.....	.....	.....

* May 1933 and later contracts, basis duty, if any, paid by seller; quotations on March 1933 contracts available also on this basis (see pp. 177-78).

TABLE II.—PRICES OF CALIFORNIAN WHEAT FUTURES AND INTER-OPTION SPREADS AT LIVERPOOL, WEEKLY, 1886-1891*

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1886											1887										
Jan. 9											Jan. 8	7 10.6	8 .1	+1.6
16											16	7 9.0	7 10.6	+1.6
23											22	7 8.8	7 10.0	+1.2
30											29	7 8.2	7 9.4	+1.2
Feb. 6											Feb. 5	7 6.7	7 8.4	7 7.4	+1.7	-1.0
13											12	7 5.6	7 7.3	7 7.8	+1.7	+ .5
20											19	7 7.2	7 7.6	7 8.2	+ .4	+ .6
27											26	7 7.0	7 8.4	7 8.9	+1.4	-1.5
Mar. 6											Mar. 5	7 7.1	7 8.9	7 8.9	+1.8	.0
13											12	7 9.5	7 11.4	7 11.7	+1.9	+ .8
20											19	7 8.8	7 11.0	8 .3	+2.2	+1.8
27											26	7 9.6	7 11.3	8 .4	+1.7	+1.1
Apr. 3											Apr. 2	7 11.4	7 11.8	7 11.8	+ .4
10											9	7 11.7	8 1.2	+1.5
17											16	7 11.8	8 1.0	+1.2
24											23	7 11.6	8 .3	+ .7
May 1											30	8 .0	8 1.0	+1.0
8		7 1.8	7 2.0	.....	.....		+ .2	.....	.....	.....	May 7	.....	8 1.7	8 2.7	.....	.....	.....	+1.0	.....	.....
15		7 2.0	7 2.0	.....	.....		.0	.....	.....	.....	14	.....	8 2.6	8 3.4	.....	.....	.....	+ .8	.....	.....
22		7 3.4	7 1.9	.....	.....		-1.5	.....	.....	.....	21	.....	8 1.9	8 3.2	.....	.....	.....	+1.8	.....	.....
29		7 2.2	7 .6	.....	.....		-1.6	.....	.....	.....	28	.....	8 1.6	8 2.8	.....	.....	.....	+1.2	.....	.....
June 5			6 11.2	.....	.....			.....	.....	.....	June 4	.....	.....	8 1.8	.....	.....	.....	.....	.....	.....
12			6 9.5	6 11.4	.....			+1.0	.....	.....	11	.....	.....	8 1.6	.....	.....	.....	.....	.....	.....
19			6 8.8	6 10.8	.....			+2.0	.....	.....	18	.....	.....	7 11.8	.....	.....	.....	.....	.....	.....
26			6 8.1	6 9.9	.....			+1.8	.....	.....	25	.....	.....	8 .0	.....	.....	.....	.....	.....	.....
July 3			6 5.8	6 8.1	.....			+2.8	.....	.....	July 2	.....	.....	7 11.0	.....	.....	.....	.....	.....	.....
10			6 6.4	6 8.8	6 9.7			+2.4	+ .9	.....	9	.....	.....	7 6.5	7 8.0	.....	.....	.....	+1.5	.....
17			6 9.4	6 10.3	.....			+2.4	+ .9	.....	16	.....	.....	7 4.6	7 6.0	.....	.....	.....	+1.5	.....
24			6 7.9	6 10.2	6 11.0			+2.3	+ .8	.....	23	.....	.....	7 2.8	7 4.6	.....	.....	.....	+1.8	.....
31			6 7.4	6 9.3	6 10.2			+1.9	+ .9	.....	30	.....	.....	7 1.8	7 3.2	.....	.....	.....	+1.9	.....
Aug. 7			6 9.2	6 10.8	.....			.....	+1.6	.....	Aug. 6	.....	.....	7 .8	7 2.5	.....	.....	.....	.....	.....
14			6 9.9	6 11.0	.....			.....	+1.1	.....	13	.....	.....	6 11.0	.....	.....	.....	.....	.....	.....
21			6 11.7	7 .2	.....			.....	+ .5	.....	20	.....	.....	6 9.6	.....	.....	.....	.....	.....	.....
28			7 1.2	7 2.7	.....			.....	+1.5	.....	27	.....	.....	6 8.0	.....	.....	.....	.....	.....	.....
Sept. 4			7 .2	7 1.5	.....			.....	+1.3	.....	Sept. 3	.....	.....	6 2.8	6 6.4	.....	.....	.....	.....	+3.6
11			7 .4	7 2.0	.....			.....	+1.6	.....	10	.....	.....	6 1.7	6 3.6	.....	.....	.....	.....	+1.9
18			6 10.9	7 .8	.....			.....	+1.9	.....	17	.....	.....	6 .7	6 2.7	.....	.....	.....	.....	+2.0
25			6 10.6	7 .2	.....			.....	+1.6	.....	24	.....	.....	6 .4	6 2.5	.....	.....	.....	.....	+2.1
Oct. 2			6 9.6	6 11.0	.....			.....	+1.4	.....	Oct. 1	.....	.....	6 1.5	6 4.0	.....	.....	.....	.....	+2.5
9			6 9.1	6 10.5	.....			.....	+1.4	.....	8	.....	.....	6 2.9	6 4.7	.....	.....	.....	.....	+1.8
16			6 9.2	6 10.4	.....			.....	+1.2	.....	15	.....	6 6.0	6 3.2	6 4.4	.....	.....	.....	.....	+1.2
23			6 10.4	6 11.6	.....			.....	+1.2	.....	22	.....	6 7.2	6 3.6	6 5.0	.....	.....	.....	.....	+1.4
30			6 10.9	6 11.6	.....			.....	+ .7	.....	29	.....	6 8.5	6 5.2	6 6.4	.....	.....	.....	.....	+1.2
Nov. 6	7 1.1	.....	.....	6 11.2	.....			.....	.....	+1.9	Nov. 5	6 7.8	.....	.....	6 6.1	.....	.....	.....	.....	+1.7
13	7 1.8	.....	.....	6 11.8	.....			.....	.....	+1.5	12	6 9.0	.....	.....	6 6.6	.....	.....	.....	.....	+2.4
20	7 1.8	.....	.....	7 .8	.....			.....	.....	+1.0	19	6 11.0	.....	.....	6 9.4	.....	.....	.....	.....	+1.6
27	7 2.0	.....	.....	7 1.8	.....			.....	.....	+ .2	26	7 .2	.....	.....	6 9.8	.....	.....	.....	.....	+2.4
Dec. 4	7 4.8	.....	.....	7 3.4	.....			.....	.....	+1.4	Dec. 3	7 .9	.....	.....	6 10.0	.....	.....	.....	.....	+2.9
11	7 6.6	7 7.0	.....	7 5.2	+ .4			.....	.....	+1.4	10	7 .8	7 1.8	.....	6 10.0	+1.0	.....	.....	.....	+2.8
18	7 8.9	7 9.7	.....	7 7.6	+ .8			.....	.....	+1.8	17	6 11.7	7 .6	.....	6 9.1	+ .9	.....	.....	.....	+2.6
25	7 8.6	7 9.7	.....	7 7.6	+1.1			.....	.....	+1.0	24	6 11.8	7 1.0	.....	6 9.4	+1.2	.....	.....	.....	+2.4
31	7 11.0	7 11.8	.....	7 9.1	+ .8			.....	.....	+1.9	31	7 2.3	7 8.8	.....	7 .2	+1.5	.....	.....	.....	+2.1

* Weekly averages of daily closing prices in shillings and pence per 100 lbs.; May 7, 1886 through 1888, from Chicago Daily Trade Bulletin; and thereafter, from Broomhall's Corn Trade News. Trading in the Californian futures continued into October 1896, but dropped to minor importance soon after introduction of the American Red Wheat future in August 1891 (pp. 143-44).

TABLE II.—Continued

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Week ending	Prices					Spreads					Week ending	Prices					Spreads													
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.									
1888											1889																			
Jan. 7....	7 1.7	7 2.9	.....	.....	.....	+1.2	.....	.....	.....	.....	Jan. 5....	7 10.2	7 10.8	.....	.....	.....	.....	.....	.....	.....	+ .6	.....	.....	.....	.....	
14....	7 .4	7 2.0	.....	.....	.....	+1.6	.....	.....	.....	.....	12....	7 10.6	7 11.1	.....	.....	.....	.....	.....	.....	.....	.....	+ .5	.....	.....	.....	.....
21....	6 11.8	7 1.6	.....	.....	.....	+1.8	.....	.....	.....	.....	19....	7 9.2	7 9.7	.....	.....	.....	.....	.....	.....	.....	.....	+ .5	.....	.....	.....	.....
28....	6 10.3	7 .2	.....	.....	.....	+1.9	.....	.....	.....	.....	26....	7 7.9	7 8.1	7 8.3	.....	.....	.....	.....	.....	.....	.....	+ .2	+ .2	.....	.....	.....	
Feb. 4....	6 9.5	6 11.2	.....	.....	.....	+1.7	.....	.....	.....	.....	Feb. 2....	7 7.7	7 7.7	7 7.8	.....	.....	.....	.....	.....	.....	.....	.0	+ .1	.....	.....	.....	
11....	6 8.7	6 10.8	.....	.....	.....	+1.6	.....	.....	.....	.....	9....	7 8.5	7 8.4	7 8.4	.....	.....	.....	.....	.....	.....	.....	-.1	.0	.....	.....	.....	
18....	6 9.0	6 9.5	.....	.....	.....	+ .5	.....	.....	.....	.....	16....	7 9.7	7 9.3	7 8.9	.....	.....	.....	.....	.....	.....	.....	-.4	-.4	.....	.....	.....	
25....	6 9.0	6 10.6	.....	.....	.....	+1.6	.....	.....	.....	.....	23....	7 9.2	7 8.9	7 8.2	.....	.....	.....	.....	.....	.....	.....	-.3	-.7	.....	.....	.....	
Mar. 3....	6 8.7	6 10.2	6 10.4	.....	.....	+1.5	+ .2	.....	.....	.....	Mar. 2....	7 9.9	7 9.9	7 9.0	.....	.....	.....	.....	.....	.....	.....	.0	-.9	.....	.....	.....	
10....	6 8.7	6 9.9	6 10.2	.....	.....	+1.2	+ .3	.....	.....	.....	9....	7 9.2	7 8.7	7 7.5	.....	.....	.....	.....	.....	.....	.....	-.5	-.2	.....	.....	.....	
17....	6 8.1	6 9.4	6 9.6	.....	.....	+1.3	+ .2	.....	.....	.....	16....	7 7.6	7 7.4	7 6.2	.....	.....	.....	.....	.....	.....	.....	-.2	-.2	.....	.....	.....	
24....	6 7.9	6 9.0	6 9.2	.....	.....	+1.1	+ .2	.....	.....	.....	23....	7 6.9	7 6.8	7 6.1	.....	.....	.....	.....	.....	.....	.....	-.1	-.7	.....	.....	.....	
31....	6 7.5	6 8.8	6 8.6	.....	.....	+1.3	-.2	.....	.....	.....	Apr. 30....	7 5.8	7 5.7	7 5.3	.....	.....	.....	.....	.....	.....	.....	-.1	-.4	.....	.....	.....	
Apr. 7....	.....	6 7.5	6 7.8	.....	.....	.....	+ .3	.....	.....	.....	Apr. 6....	.....	7 3.9	7 3.5	.....	.....	.....	.....	.....	.....	.....	.....	-.4	.....	.....	.....	
14....	.....	6 8.4	6 8.5	.....	.....	.....	+ .1	.....	.....	.....	18....	.....	7 1.6	7 1.3	.....	.....	.....	.....	.....	.....	.....	.....	-.3	.....	.....	.....	
21....	.....	6 9.2	6 9.5	.....	.....	.....	+ .3	.....	.....	.....	20....	.....	7 1.6	7 1.4	.....	.....	.....	.....	.....	.....	.....	.....	-.2	.....	.....	.....	
28....	.....	6 9.3	6 9.8	.....	.....	.....	+ .5	.....	.....	.....	27....	.....	7 .8	7 .6	7 .4	.....	.....	.....	.....	.....	.....	.....	-.2	-.2	.....	.....		
May 5....	.....	6 9.8	6 10.0	.....	.....	.....	+ .2	.....	.....	.....	May 4....	.....	7 1.2	7 .9	7 .7	.....	.....	.....	.....	.....	.....	.....	-.3	-.2	.....	.....		
12....	.....	6 9.4	6 9.7	6 11.0	.....	.....	+ .3	+1.3	.....	.....	11....	.....	7 .4	7 .2	7 .2	.....	.....	.....	.....	.....	.....	.....	-.2	.0	.....	.....		
19....	.....	6 10.8	6 11.5	7 1.0	.....	.....	+ .7	+1.5	.....	.....	18....	.....	6 11.8	6 11.7	6 11.6	.....	.....	.....	.....	.....	.....	.....	-.1	-.1	.....	.....		
26....	6 10.4	6 10.8	7 .3	+ .4	+1.5	25....	6 9.4	6 9.5	6 9.4	+ .1	-.1			
June 2....	June 1....	6 9.7	6 9.7	6 10.00	+ .3			
9....	6 9.0	6 10.2	+1.2	8....	6 9.6	6 9.5	6 9.7	-.1	+ .2			
16....	6 8.4	6 9.9	+1.5	15....	6 9.7	6 9.6	6 9.8	-.1	+ .2		
23....	6 7.6	6 9.0	+1.4	22....	6 10.2	6 10.2	6 10.20	.0		
30....	6 7.1	6 8.8	+1.7	29....	6 11.4	6 11.4	6 11.30	-.1		
July 7....	6 8.3	6 9.7	6 10.4	+1.4	+ .7	July 6....	7 .3	7 .4	7 .3	+ .1	-.1		
14....	6 8.8	6 9.7	6 10.6	+ .9	+ .8	13....	7 2.3	7 2.6	7 2.3	+ .3	-.3		
21....	6 9.1	6 10.8	6 11.3	+1.7	+ .5	20....	7 1.9	7 1.9	7 1.60	-.3		
28....	6 10.2	6 11.6	7 .2	+1.4	+ .6	27....	7 3.6	7 3.8	7 3.7	+ .2	-.1		
Aug. 4....	7 2.0	7 3.0	+1.0	Aug. 3....	7 2.0	7 2.1	+ .1	
11....	7 3.4	7 4.6	+1.2	10....	7 2.6	7 2.7	+ .1	
18....	7 5.4	7 6.2	+ .8	17....	7 2.0	7 2.00	
25....	7 11.1	7 11.5	+ .4	24....	7 1.8	7 1.80	
Sept. 1....	8 2.0	8 2.4	+ .4	31....	7 .8	7 .4	-.4	
8....	8 2.4	8 3.1	+ .7	Sept. 7....	7 .7	6 11.8	-.9	
15....	8 .9	8 1.2	+ .3	14....	7 .6	6 11.6	-.1	
22....	7 10.4	7 10.4	+ .0	21....	7 1.6	7 .5	-.1	
29....	7 11.2	8 .0	+ .8	28....	7 3.1	7 2.3	-.8	
Oct. 6....	8 2.9	8 4.7	+1.8	Oct. 5....	7 1.0	7 3.9	7 3.0	-.9	-.1	
13....	8 5.0	8 5.8	+ .8	12....	7 3.0	7 4.8	7 4.0	-.8	-.1	
20....	8 4.5	8 5.1	+ .6	19....	7 2.2	7 4.2	7 3.0	-.2	-.8	
27....	8 4.2	8 4.8	+ .6	26....	7 1.1	7 2.9	7 1.7	-.2	-.6	
Nov. 3....	8 6.4	Nov. 2....	7 1.3	7 2.0	-.7
10....	8 6.4	8 5.0	+ .8	9....	7 1.2	7 1.9	-.7
17....	8 5.6	8 4.8	+ .8	16....	7 1.4	7 1.8	-.4
24....	8 3.8	8 3.0	+ .8	23....	7 1.7	7 1.5	7 2.4	-.7
Dec. 1....	8 1.8	8 1.2	+ .6	30....	7 1.8	7 1.4	7 2.9	-.1
8....	8 .1	7 11.3	+ .8	Dec. 7....	7 2.3	7 1.8	7 3.9	-.6
15....	8 .8	7 11.2	+1.6	14....	7 1.7	7 1.2	7 3.2	-.5
22....	7 11.8	.....	.....	7 11.0	.....	.....	.....	.....	+ .8	.....	21....	7 2.1	7 1.5	.....	.....	7 3.4	.....	.....	.....	.....						

TABLE II.—Concluded

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1890											1891										
Jan. 4....	7 3.0	7 2.2	.....	.....	.....	-.8	.....	.....	.....	.....	Jan. 3....	7 8.6	7 8.3	.....	.....	-.3	.....	.....	.....	.....
11....	7 3.2	7 2.3	.....	.....	.....	-.9	.....	.....	.....	.....	10....	7 9.6	7 9.0	.....	.....	-.6	.....	.....	.....	.....
18....	7 3.2	7 2.3	.....	.....	.....	-.9	.....	.....	.....	.....	17....	7 9.5	7 8.5	7 7.7	.....	-1.0	-.9	.....	.....	.....
25....	7 2.8	7 2.0	7 1.4	.....	.....	-.8	-.6	.....	.....	.....	24....	7 9.1	7 7.7	7 6.6	.....	-1.4	-1.1	.....	.....	.....
Feb. 1....	7 2.1	7 1.4	7 1.4	.....	.....	-.7	.0	.....	.....	.....	31....	7 10.1	7 8.6	7 7.2	.....	-1.5	-1.4	.....	.....	.....
8....	7 2.4	7 1.5	7 1.3	.....	.....	-.9	-.2	.....	.....	.....	Feb. 7....	7 9.7	7 8.4	7 7.0	.....	-1.3	-1.4	.....	.....	.....
15....	7 2.8	7 1.8	7 1.6	.....	.....	-1.0	-.2	.....	.....	.....	14....	7 9.4	7 8.5	7 7.1	.....	-.9	-1.4	.....	.....	.....
22....	7 2.8	7 1.5	7 1.2	.....	.....	-1.3	-.3	.....	.....	.....	21....	7 9.8	7 9.2	7 7.7	.....	-.6	-1.5	.....	.....	.....
Mar. 1....	7 2.7	7 1.6	7 1.3	7 1.1	.....	-1.1	-.3	-.2	.....	.....	28....	7 10.3	7 10.3	7 9.0	.....	.0	-1.3	.....	.....	.....
8....	7 2.9	7 1.7	7 1.4	7 1.4	.....	-1.2	-.3	.0	.....	.....	Mar. 7....	7 11.7	8 0.0	7 10.9	.....	+ .8	-1.1	.....	.....	.....
15....	7 2.5	7 1.4	7 1.0	7 1.1	.....	-1.1	-.4	+ .1	.....	.....	14....	8 8.1	8 3.7	8 2.7	.....	+ .6	-1.0	.....	.....	.....
22....	7 2.4	7 1.4	7 1.1	7 1.6	.....	-1.0	-.3	+ .5	.....	.....	21....	8 4.4	8 3.3	8 1.7	.....	-1.1	-1.6	.....	.....	.....
29....	7 1.4	7 .5	7 .2	7 .8	.....	-.9	-.3	+ .6	.....	.....	28....	8 4.8	8 4.2	8 2.9	.....	-.6	-1.3	.....	.....	.....
Apr. 5....	.....	6 11.1	6 10.8	6 11.1	.....	.....	-.3	+ .3	.....	.....	Apr. 4....	.....	8 6.6	8 5.2	8 4.8	.....	-1.4	-.4	.....	.....
12....	.....	6 11.7	6 11.4	7 .0	.....	.....	-.3	+ .6	.....	.....	11....	.....	8 7.4	8 6.5	8 5.6	.....	-.9	-.9	.....	.....
19....	.....	7 1.4	7 1.3	7 1.8	.....	.....	-.1	+ .5	.....	.....	18....	.....	8 8.0	8 7.2	8 6.5	.....	-.8	-.7	.....	.....
26....	.....	7 1.4	7 1.4	7 2.2	.....	.....	.0	+ .8	.....	.....	25....	.....	8 10.4	8 10.6	8 10.5	.....	+ .2	-.1	.....	.....
May 3....	.....	7 1.9	7 2.3	7 3.0	7 3.0	.....	+ .4	+ .7	.0	.....	May 2....	.....	8 6.7	8 7.3	8 7.2	.....	+ .6	-.1	.....	.....
10....	.....	7 2.7	7 3.4	7 4.4	7 4.2	.....	+ .7	+1.0	-.2	.....	9....	.....	8 5.9	8 5.9	8 6.0	.....	.0	+ .1	.....	.....
17....	.....	7 2.0	7 2.6	7 3.6	7 3.3	.....	+ .6	+1.0	-.3	.....	16....	.....	8 6.0	8 6.2	8 6.5	.....	+ .2	+ .3	.....	.....
24....	.....	7 1.6	7 1.8	7 3.0	7 3.1	.....	+ .2	+1.2	+ .1	.....	23....	.....	8 6.4	8 6.8	8 7.6	.....	+ .4	+ .3	.....	.....
31....	.....	7 1.5	7 1.2	7 2.4	7 2.6	.....	-.3	+1.2	+ .2	.....	30....	.....	8 6.2	8 6.8	8 7.7	.....	+ .6	+ .9	.....	.....
June 7....	.....	.....	7 1.5	7 2.6	7 2.8	.....	.....	+1.1	+ .2	.....	June 6....	.....	8 5.6	8 7.2	.....	.....	+1.6	.....	.....	.....
14....	.....	.....	7 1.0	7 2.5	7 3.0	.....	.....	+1.5	+ .5	.....	13....	.....	8 5.1	8 6.6	.....	.....	+1.5	.....	.....	.....
21....	.....	.....	7 .4	7 2.2	7 2.5	.....	.....	+1.8	+ .3	.....	20....	.....	8 4.2	8 6.0	.....	.....	+1.8	.....	.....	.....
28....	.....	.....	7 .2	7 2.2	7 2.6	.....	.....	+2.0	+ .4	.....	27....	.....	8 2.0	8 4.3	.....	.....	+2.3	.....	.....	.....
July 5....	.....	.....	7 1.1	7 3.2	7 3.3	.....	.....	+2.1	+ .1	.....	July 4....	.....	7 10.8	8 .5	.....	.....	+1.7	.....	.....	.....
12....	.....	.....	7 2.8	7 4.5	7 4.9	.....	.....	+1.7	+ .4	.....	11....	.....	7 11.5	8 1.6	.....	.....	+2.1	.....	.....	.....
19....	.....	.....	7 2.9	7 4.3	7 4.6	.....	.....	+1.4	+ .3	.....	18....	.....	7 11.2	8 .1	.....	.....	+1.9	.....	.....	.....
26....	.....	.....	7 4.1	7 5.5	7 5.8	.....	.....	+1.4	+ .3	.....	25....	.....	7 11.5	8 .9	.....	.....	+1.4	.....	.....	.....
Aug. 2....	.....	.....	.....	7 6.1	7 6.4	.....	.....	.....	+ .3	.....	Aug. 1....	.....	8 3.6	8 4.2	8 4.0	.....	+ .6	-.2	.....	.....
9....	.....	.....	.....	7 5.6	7 6.2	.....	.....	.....	+ .6	.....	8....	.....	.....	8 4.0	8 4.0	.....	.....	-.0	.....	.....
16....	.....	.....	.....	7 7.4	7 8.2	.....	.....	.....	+ .8	.....	15....	.....	.....	8 6.6	8 6.4	.....	.....	-.2	.....	.....
23....	.....	.....	.....	7 8.4	7 9.3	.....	.....	.....	+ .9	.....	22....	.....	.....	9 .8	9 1.4	.....	.....	+ .6	.....	.....
30....	.....	.....	.....	7 9.8	7 10.7	.....	.....	.....	+ .9	.....	29....	.....	.....	9 1.4	9 1.9	.....	.....	+ .5	.....	.....
Sept. 6....	.....	.....	.....	7 6.8	7 7.7	.....	.....	.....	+ .9	.....	Sept. 5....	.....	.....	9 .4	9 .8	.....	.....	+ .4	.....	.....
13....	.....	.....	.....	7 4.8	7 6.1	.....	.....	.....	+1.3	.....	12....	.....	.....	8 7.5	8 8.2	.....	.....	+ .7	.....	.....
20....	.....	.....	.....	7 4.2	7 5.7	.....	.....	.....	+1.5	.....	19....	.....	.....	8 8.2	8 9.2	.....	.....	+1.0	.....	.....
27....	.....	.....	.....	7 3.8	7 5.3	.....	.....	.....	+1.5	.....	26....	.....	.....	8 9.2	8 10.3	.....	.....	+1.1	.....	.....
Oct. 4....	.....	7 5.4	.....	7 2.6	7 4.4	.....	.....	.....	+1.8	.....	Oct. 3....	8 8.4	.....	8 7.2	8 8.0	.....	.....	+ .8	+ .4	.....
11....	7 6.4	7 6.4	.....	7 4.6	7 6.0	.0	.....	.....	+1.4	+ .4	10....	8 9.8	.....	8 8.0	8 10.0	.....	.....	+2.0	-.2	.....
18....	7 7.0	7 6.9	.....	7 6.0	7 7.4	-.1	.....	.....	+1.4	-.4	17....	8 11.1	.....	8 9.3	8 10.6	.....	.....	+1.3	+ .5	.....
25....	7 6.7	7 6.5	.....	7 6.8	7 7.0	-.2	.....	.....	+ .2	-.3	24....	8 9.3	.....	8 8.9	8 9.4	.....	.....	+ .5	-.1	.....
Nov. 1....	7 7.5	7 7.2	.....	.....	7 7.8	-.3	.....	.....	.....	-.3	31....	8 9.8	.....	8 9.0	8 9.5	.....	.....	+ .5	+ .3	.....
8....	7 7.8	7 7.2	.....	.....	7 8.0	-.6	.....	.....	.....	-.2	Nov. 7....	8 11.2	.....	.....	8 11.0	.....	.....	.....	+ .2	.....
15....	7 7.1	7 6.8	.....	.....	7 7.4	-.3	.....	.....	.....	-.3	14....	9 2.0	.....	.....	9 1.4	.....	.....	.....	+ .6	.....
22....	7 5.7	7 5.1	.....	.....	7 6.2	-.6	.....	.....	.....	-.5	21....	9 1.2	.....	.....	9 .2	.....	.....	.....	+1.0	.....
29....	7 5.5	7 5.1	.....	.....	7 6.1	-.4	.....	.....	.....	-.6	28....	9 .5	.....	.....	8 11.5	.....	.....	.....	+1.0	.....
Dec. 6....	7 6.3	7 6.0	.....	.....	7 6.2	-.3	.....	.....	.....	+ .1	Dec. 5....	8 11.3	.....	.....	8 9.7	.....	.....	.....	+1.6	.....
13....	7 6.4	7 6.2	.....	.....	7 6.0	-.2	.....	.....	.....	+ .4	12....	8 11.5	8 11.5	.....	8 9.8	.....	.....	.....	+1.7	.....
20....	7 7.7	7 7.3	.....	.....	7 6.8	-.4	.....	.....	.....	+ .9	19....	8 9.5	8 9.2	.....	8 9.3	.....	.....	.....	+ .2	.....
27....	7 7.7	7 7.3	.....	.....	7 7.4	-.4	.....	.....	.....	+ .3	26....	8 9.0	8 9.1	.....	8 8.6	.....	.....	.....	+ .4	.....

TABLE III.—PRICES OF "AMERICAN RED" AND "GRADED RED" WHEAT FUTURES AND INTER-OPTION SPREADS AT LIVERPOOL, WEEKLY, 1891-1914*

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1891											1892										
Jan. 3											Jan. 2	8 4.4	8 4.4				.0				
10											9	8 2.8	8 2.8				.0				
17											16	7 11.9	8 .0				+ .1				
24											23	7 11.3	7 11.3				.0				
31											30	7 10.2	7 10.1				-.1				
Feb. 7											Feb. 6	7 7.7	7 7.7				.0				
14											13	7 8.4	7 8.3				-.1				
21											20	8 .5	8 .0				-.5				
28											27	7 11.1	7 10.3				-.8				
Mar. 7											Mar. 5	7 11.0	7 10.7				-.3				
14											12	7 10.1	7 9.2	7 8.7			-.9	-.5			
21											19	7 10.0	7 7.3	7 5.6			-2.7	-1.7			
28											26	7 9.0	7 5.8	7 4.4			-3.2	-1.4			
Apr. 4											Apr. 2		7 2.9	7 1.7				-1.2			
11											9		7 2.7	7 1.0				-1.7			
18											16		7 2.5	7 1.1				-1.4			
25											23		7 1.2	7 .2				-1.0			
May 2											30		7 1.0	7 .5				-.5			
9											May 7		7 .7	7 .7				.0			
16											14		7 .2	6 11.9				-.3			
23											21		6 9.8	6 10.8				+1.0			
30											28		6 9.0	6 10.1				+ .1			
June 6											June 4			6 10.4							
13											11			6 10.9							
20											18			6 9.0	6 10.3				+1.3		
27											25			6 7.6	6 8.9				+1.3		
July 4											July 2			6 7.2	6 9.2				+2.0		
11											9			6 6.6	6 8.9	6 9.2			+2.3	+ .3	
18											16			6 6.2	6 7.3	6 7.5			+1.1	+ .2	
25											23			6 8.2	6 8.6	6 9.0			+ .4	+ .4	
Aug. 1											30			6 7.8	6 7.8	6 8.0			.0	+ .2	
8											Aug. 6				6 7.5	6 8.0				+ .5	
15				8 .8	8 .4				+ .1		13				6 6.4	6 7.4			+1.0		
22				8 7.3	8 7.4				+ .1		20				6 4.0	6 5.2			+1.2		
29				8 5.8	8 6.5				+ .7		27				6 2.0	6 3.5			+1.5		
Sept. 5				8 2.4	8 3.5				+1.1		Sept. 3				6 1.8	6 3.4			+1.6		
12				7 8.9	7 10.8				+1.9		10				6 .8	6 2.6			+2.0		
19	8 1.9			7 10.7	8 .2				+1.5	+1.7	17				6 .2	6 2.2			+2.0		
26	8 3.9			8 1.1	8 2.2				+1.1	+1.7	24				6 .0	6 2.0			+2.0		
Oct. 3	8 3.2			7 11.7	8 1.3				+1.6	+1.9	Oct. 1				6 .7	6 2.9			+2.2		
10	8 5.5			8 2.0	8 4.0				+2.0	+1.5	8				6 .7	6 3.1			+2.4		
17	8 7.2			8 4.8	8 5.5				+ .7	+1.7	15				6 1.9	6 3.3			+1.4		
24	8 6.2			8 8.8	8 4.7				+ .9	+1.5	22				6 1.5	6 2.6			+1.1		
31	8 6.1			8 4.2	8 4.6				+ .4	+1.5	29	6 2.6			5 11.3	6 .3			+ .9	+2.4	
Nov. 7	8 7.8				8 6.6				+1.2		Nov. 5	6 1.6	6 2.9			5 10.7	+1.3		+2.9		
14	8 10.4				8 9.4				+1.0		12	6 2.1	6 3.6			5 11.0	+1.5		+3.1		
21	8 8.5				8 7.8				+ .7		19	6 2.0	6 3.6			5 10.9	+1.6		+3.1		
28	8 8.6	8 8.9			8 6.5	+ .3			+2.1		26	6 1.8	6 3.4			5 10.3	+1.8		+3.3		
Dec. 5	8 7.6	8 8.2			8 5.0	+ .6			+2.6		Dec. 3	6 .6	6 2.6			5 9.4	+2.0		+3.2		
12	8 8.0	8 8.4			8 5.9	+ .4			+2.1		10	5 11.4	6 1.2			5 8.6	+1.8		+2.8		
19	8 5.8	8 6.3			8 3.6	+ .5			+2.2		17	5 10.3	6 .1			5 7.8	+1.8		+2.5		
26	8 5.3	8 5.3			8 3.9	.0			+1.4		24	5 9.4	5 11.2			5 6.8	+1.8		+2.6		
											31	5 11.4	6 1.4			5 8.8	+2.0			+2.6	

* Weekly averages of daily closing prices in shillings and pence per 100 lbs., from *Broomhall's Corn Trade News*. "American Red" future, 1891-1903; "Graded," from 1903. Technically the latter was not purely a red wheat future from 1910, but see Table I, footnote f.

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.		Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.
1896																					
Jan. 7	6 .8	6 2.4	.....	.....	.....	+1.6	.....	.....	.....	.....	Jan. 6	5 3.8	5 5.4	.....	.....	.....	.....	.....	.....	.....
14	6 .8	6 2.5	.....	.....	.....	+1.9	.....	.....	.....	.....	13	5 3.7	5 5.2	.....	.....	.....	.....	.....	.....	.....
21	6 1.7	6 3.6	.....	.....	.....	+1.9	.....	.....	.....	.....	20	5 2.8	5 3.8	.....	.....	.....	.....	.....	.....	.....
28	6 .7	6 2.9	.....	.....	.....	+2.2	.....	.....	.....	.....	27	5 1.5	5 2.9	.....	.....	.....	.....	.....	.....	.....
Feb. 4	5 11.0	6 1.4	.....	.....	.....	+2.4	.....	.....	.....	.....	Feb. 3	5 1.0	5 2.2	.....	.....	.....	.....	.....	.....	.....
11	5 11.5	6 1.6	.....	.....	.....	+2.1	.....	.....	.....	.....	10	4 11.5	5 .7	5 1.8	.....	.....	.....	.....	.....	.....
18	5 10.4	6 .0	6 1.7	.....	.....	+2.2	+1.1	.....	.....	.....	17	4 9.0	4 10.1	4 11.1	.....	.....	.....	.....	.....	.....
25	5 8.7	5 11.1	6 .8	.....	.....	+2.4	+1.2	.....	.....	.....	24	4 9.4	4 10.5	4 11.5	.....	.....	.....	.....	.....	.....
Mar. 4	5 7.6	5 10.0	5 11.2	.....	.....	+2.4	+1.2	.....	.....	.....	Mar. 3	4 9.7	4 10.8	4 11.8	.....	.....	.....	.....	.....	.....
11	5 7.2	5 8.8	5 10.2	.....	.....	+1.6	+1.4	.....	.....	.....	10	4 9.6	4 10.6	4 11.6	.....	.....	.....	.....	.....	.....
18	5 6.6	5 7.8	5 9.4	.....	.....	+1.2	+1.6	.....	.....	.....	17	4 9.4	4 9.8	4 10.5	.....	.....	.....	.....	.....	.....
25	5 6.1	5 7.1	5 8.6	.....	.....	+1.0	+1.5	.....	.....	.....	24	4 9.1	4 9.4	4 9.6	.....	.....	.....	.....	.....	.....
Apr. 1	5 6.4	5 7.2	5 8.6	.....	.....	+ .8	+1.4	.....	.....	.....	31	4 9.0	4 9.5	4 9.8	.....	.....	.....	.....	.....	.....
8	.....	5 8.7	5 10.2	.....	.....	.....	+1.5	.....	.....	.....	Apr. 7	.....	4 10.2	4 10.8	.....	5 1.8	.....	.....	.....	.....
15	.....	5 10.0	5 11.5	.....	.....	.....	+1.5	.....	.....	.....	14	.....	4 10.6	4 11.1	.....	5 1.8	.....	.....	.....	.....
22	.....	5 8.5	5 10.0	.....	.....	.....	+1.5	.....	.....	.....	21	.....	4 10.9	4 11.0	.....	5 1.4	.....	.....	.....	.....
29	.....	5 8.9	5 10.6	.....	.....	.....	+1.7	.....	.....	.....	28	.....	4 10.3	4 10.3	.....	5 .8	.....	.....	.....	.....
May 6	.....	5 9.5	5 11.5	6 2.0	.....	.....	+2.0	+2.5	.....	.....	May 5	.....	4 9.1	4 9.1	4 10.0	.....	.....	.....	.....	.....
13	.....	5 11.4	6 .9	6 3.8	.....	.....	+1.5	+2.9	.....	.....	12	.....	4 7.8	4 7.6	4 8.0	4 9.6	.....	.....	.....	.....
20	.....	5 9.7	5 11.2	6 2.2	.....	.....	+1.5	+3.0	.....	.....	19	.....	4 4.8	4 4.8	4 5.4	4 6.6	.....	.....	.....	.....
27	.....	5 8.4	5 9.9	6 .9	.....	.....	+1.5	+3.0	.....	.....	26	.....	4 3.8	4 4.0	4 4.8	4 5.9	.....	.....	.....	.....
June 3	.....	.....	5 9.8	6 .2	.....	.....	.....	+2.9	.....	.....	June 2	.....	.....	4 2.3	4 3.4	4 5.0	.....	.....	.....	.....
10	.....	.....	5 8.2	5 11.2	.....	.....	.....	+3.0	.....	.....	9	.....	.....	4 4.8	4 6.4	4 7.8	.....	.....	.....	.....
17	.....	.....	5 8.6	5 11.6	6 1.6	.....	.....	+3.0	+2.0	.....	16	.....	.....	4 6.5	4 8.4	4 9.8	.....	.....	.....	.....
24	.....	.....	5 8.5	5 11.6	6 1.5	.....	.....	+3.1	+1.9	.....	23	.....	.....	4 8.3	4 10.3	4 11.5	.....	.....	.....	.....
July 1	.....	.....	5 8.0	5 11.1	6 1.0	.....	.....	+3.1	+1.9	.....	30	.....	.....	4 7.9	4 9.4	4 10.6	.....	.....	.....	.....
8	.....	.....	5 8.1	5 11.4	6 1.3	.....	.....	+3.3	+1.9	.....	July 7	.....	.....	4 7.5	4 8.5	4 9.7	.....	.....	.....	.....
15	.....	.....	5 9.5	5 11.9	6 1.8	.....	.....	+2.4	+1.9	.....	14	.....	.....	4 7.6	4 8.9	4 10.1	.....	.....	.....	.....
22	.....	.....	5 9.2	5 11.4	6 1.4	.....	.....	+2.2	+2.0	.....	21	.....	.....	4 5.7	4 6.8	4 8.1	.....	.....	.....	.....
29	.....	.....	5 8.7	5 10.8	6 0.8	.....	.....	+2.1	+2.0	.....	28	.....	.....	4 2.0	4 3.4	4 5.0	.....	.....	.....	.....
Aug. 5	.....	.....	.....	5 8.8	5 10.8	.....	.....	.....	+2.0	.....	Aug. 4	.....	.....	4 3.6	4 5.4	.....	.....	.....	.....	.....
12	.....	.....	.....	5 7.8	5 10.0	.....	.....	.....	+2.2	.....	11	.....	.....	4 5.6	4 7.6	.....	.....	.....	.....	.....
19	.....	.....	.....	5 7.8	5 9.9	.....	.....	.....	+2.1	.....	18	.....	.....	4 5.3	4 7.3	.....	.....	.....	.....	.....
26	.....	.....	.....	5 5.9	5 8.2	.....	.....	.....	+2.3	.....	25	.....	.....	4 5.4	4 7.4	.....	.....	.....	.....	.....
Sept. 2	.....	.....	.....	5 5.5	5 7.8	.....	.....	.....	+2.3	.....	Sept. 1	.....	.....	4 4.8	4 6.7	.....	.....	.....	.....	.....
9	.....	.....	.....	5 6.4	5 8.8	.....	.....	.....	+2.4	.....	8	.....	4 10.2	.....	4 4.9	4 6.7	.....	.....	.....	.....
16	.....	.....	.....	5 7.7	5 10.1	.....	.....	.....	+2.4	.....	15	.....	4 9.5	.....	4 4.8	4 6.4	.....	.....	.....	.....
23	.....	.....	.....	5 6.8	5 9.2	.....	.....	.....	+2.4	.....	22	.....	4 8.9	.....	4 4.0	4 5.6	.....	.....	.....	.....
30	.....	.....	.....	5 5.8	5 8.2	.....	.....	.....	+2.4	.....	29	.....	4 6.8	.....	4 2.1	4 3.6	.....	.....	.....	.....
Oct. 7	.....	.....	.....	5 4.9	5 7.7	.....	.....	.....	+2.8	.....	Oct. 6	4 5.6	4 7.3	.....	4 2.3	4 4.1	+1.7	.....	.....	.....
14	5 9.5	.....	.....	5 4.2	5 6.5	.....	.....	.....	+2.3	+3.0	13	4 5.6	4 7.2	.....	4 2.7	4 4.1	+1.6	.....	.....	.....
21	5 8.2	.....	.....	5 3.1	5 5.1	.....	.....	.....	+2.0	+3.1	20	4 5.0	4 6.3	.....	4 2.2	4 3.7	+1.3	.....	.....	.....
28	5 8.5	.....	.....	5 4.8	5 5.6	.....	.....	.....	+1.3	+2.9	27	4 5.9	4 6.8	.....	4 3.3	4 4.4	+ .9	.....	.....	.....
Nov. 4	5 8.4	.....	.....	.....	5 5.4	.....	.....	.....	+3.0	+3.0	Nov. 3	4 6.4	4 7.2	.....	.....	4 4.9	+ .8	.....	.....	.....
11	5 6.0	5 8.5	.....	.....	5 3.6	+1.9	.....	.....	+3.0	+3.0	10	4 8.3	4 8.7	.....	.....	4 7.5	+ .4	.....	.....	.....
18	5 5.7	5 7.7	.....	.....	5 2.9	+2.0	.....	.....	+2.8	+2.8	17	4 10.5	4 10.8	.....	.....	4 9.9	+ .3	.....	.....	.....
25	5 5.5	5 7.4	.....	.....	5 3.4	+1.9	.....	.....	+2.1	+2.1	24	4 10.9	4 11.4	.....	.....	4 10.4	+ .5	.....	.....	.....
Dec. 2	5 5.8	5 7.2	.....	.....	5 3.1	+1.4	.....	.....	+2.7	+2.7	Dec. 1	5 .0	5 .4	.....	.....	4 11.5	+ .4	.....	.....	.....
9	5 5.9	5 7.4	.....	.....	5 3.2	+1.5	.....	.....	+2.7	+2.7	8	5 1.2	5 1.7	.....	.....	5 .8	+ .5	.....	.....	.....
16	5 6.8	5 7.6	.....	.....	5 3.8	+1.3	.....	.....	+2.5	+2.5	15	4 10.0	4 10.4	.....	.....	4 9.1	+ .4	.....	.....	.....
23	5 5.4	5 6.8	.....	.....	5 3.4	+1.4	.....	.....	+2.0	+2.0	22	4 10.0	4 10.8	.....	.....	4 8.5	+ .8	.....	.....	.....
30	5 4.0	5 5.6	.....	.....	5 2.6	+1.6	.....	.....	+1.4	+1.4	29	4 10.1	4 11.2	.....	.....	4 8.9	+1.1	.....	.....	.....

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads					
	Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.		Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.	
1896																						
Jan. 5	4 10.3	4 11.0	.....	.....	.....	+ .7	.....	.....	.....	.....	Jan. 4	5 4.8	5 5.4	.....	.....	.....	+ .6	.....	.....	.....
12	4 10.7	4 11.2	5 .0	.....	.....	+ .5	+ .8	.....	.....	.....	11	5 5.6	5 6.2	.....	.....	.....	+ .6	.....	.....	.....
19	4 9.7	4 10.3	4 11.0	.....	.....	+ .6	+ .7	.....	.....	.....	18	5 5.4	5 5.8	5 6.0	.....	.....	+ .4	+ .2	.....	.....
26	4 6.8	4 7.4	4 8.0	.....	.....	+ .6	+ .6	.....	.....	.....	25	5 7.0	5 7.1	5 7.0	.....	.....	+ .1	— .1	.....	.....
Feb. 2	4 5.4	4 6.3	4 7.2	.....	.....	+ .9	+ .9	.....	.....	.....	Feb. 1	5 8.5	5 8.5	5 8.5	.....	.....	.0	.0	.....	.....
9	4 6.6	4 7.6	4 8.4	.....	.....	+1.1	+ .8	.....	.....	.....	8	5 10.8	5 10.0	5 10.0	.....	.....	— .8	.0	.....	.....
16	4 6.6	4 7.5	4 8.0	.....	.....	+ .9	+ .5	.....	.....	.....	15	5 8.3	5 8.0	5 8.2	.....	.....	— .3	+ .2	.....	.....
23	4 6.7	4 7.1	4 7.4	.....	.....	+ .4	+ .3	.....	.....	.....	22	5 6.9	5 7.0	5 7.2	.....	.....	+ .1	+ .2	.....	.....
Mar. 2	4 7.7	4 8.3	4 8.7	.....	.....	+ .6	+ .4	.....	.....	.....	29	5 7.8	5 8.4	5 8.4	.....	.....	+ .6	.0	.....	.....
9	4 7.9	4 8.6	4 8.9	.....	.....	+ .7	+ .3	.....	.....	.....	Mar. 7	5 7.2	5 7.9	5 8.0	.....	.....	+ .7	+ .1	.....	.....
16	4 9.2	4 9.9	4 10.2	.....	.....	+ .7	+ .3	.....	.....	.....	14	5 5.9	5 6.1	5 6.1	.....	.....	+ .2	.0	.....	.....
23	4 8.6	4 9.0	4 9.4	.....	.....	+ .4	+ .4	.....	.....	.....	21	5 4.8	5 4.9	5 4.9	.....	.....	+ .1	.0	.....	.....
30	4 8.9	4 9.2	4 9.5	.....	.....	+ .3	+ .3	.....	.....	.....	28	5 4.5	5 5.0	5 5.0	5 5.5	.....	+ .5	.0	+ .5	.....	
Apr. 6	4 9.8	4 9.8	4 10.0	4 10.6	.....	.....	+ .2	+ .6	.....	.....	Apr. 4	.....	5 5.5	5 5.8	5 6.2	.....	.....	+ .3	+ .4	.....	
13	.....	4 9.6	4 9.7	4 10.6	.....	.....	+ .1	+ .9	.....	.....	11	.....	5 7.2	5 7.6	5 8.0	.....	.....	+ .4	+ .4	.....	
20	.....	4 11.0	4 11.3	5 .4	.....	.....	+ .3	+1.1	.....	.....	18	.....	5 7.0	5 7.0	5 7.3	.....	.....	.0	+ .3	.....	
27	.....	5 .9	5 1.5	5 3.0	.....	.....	+ .6	+1.5	.....	.....	25	.....	5 5.5	5 5.4	5 5.6	.....	.....	— .1	+ .2	.....	
May 4	.....	5 2.0	5 3.0	5 4.4	.....	.....	+1.0	+1.4	.....	.....	May 2	.....	5 4.5	5 4.7	5 5.0	.....	.....	+ .2	+ .3	.....	
11	.....	5 1.7	5 2.6	5 4.0	.....	.....	+ .9	+1.4	.....	.....	9	.....	5 3.2	5 3.8	5 4.0	.....	.....	+ .6	+ .2	.....	
18	.....	5 2.9	5 3.9	5 5.3	.....	.....	+1.0	+1.4	.....	.....	16	.....	5 3.8	5 3.5	5 4.0	.....	.....	+ .2	+ .5	.....	
25	.....	5 8.4	5 9.3	5 10.8	.....	.....	+ .9	+1.5	.....	.....	23	.....	5 2.6	5 3.0	5 3.2	.....	.....	+ .4	+ .2	.....	
June 1	.....	5 10.8	6 .2	.....	.....	.....	+1.4	.....	.....	.....	30	.....	5 .7	5 .9	5 1.1	.....	.....	+ .2	.....	.....
8	.....	5 10.6	6 .0	6 .8	.....	.....	+1.4	+ .8	.....	.....	June 6	.....	.....	5 .2	5 .2	.....	.....	.....	.0	.....	
15	.....	5 10.7	5 11.8	6 .5	.....	.....	+1.1	+ .7	.....	.....	18	.....	.....	5 .3	5 .3	.....	.....	.....	.0	.....	
22	.....	5 7.0	5 8.3	5 9.0	.....	.....	+1.3	+ .7	.....	.....	20	.....	.....	4 10.4	4 10.4	4 10.9	.....	.....	.....	+ .5
29	5 6.7	5 7.5	5 8.4	+1.3	+ .9	27	4 10.3	4 10.3	4 11.00	+ .7	
July 6	5 4.2	5 6.2	5 7.3	+2.0	+1.1	July 4	4 9.8	4 10.0	4 10.7	+ .2	+ .7	
13	5 2.2	5 3.6	5 4.7	+1.4	+1.1	11	4 9.9	4 9.9	4 10.60	+ .7	
20	5 2.5	5 3.8	5 5.0	+1.3	+1.2	18	4 10.4	4 10.4	4 11.10	+ .7	
27	5 4.4	5 5.7	5 7.0	+1.3	+1.3	25	4 10.7	4 10.9	4 11.4	+ .2	+ .5	
Aug. 3	5 6.6	5 7.6	+1.0	Aug. 1	4 11.2	5 .0	+ .8	
10	5 6.3	5 7.3	+1.0	8	4 11.0	4 11.8	+ .8	
17	5 5.1	5 6.1	+1.0	15	4 10.4	4 11.2	+ .8	
24	5 2.0	5 3.0	+1.0	22	4 11.3	5 .0	+ .7	
31	5 .5	5 1.5	+1.0	29	5 1.6	5 2.3	+ .7	
Sept. 7	5 2.3	4 11.7	5 .8	+1.1	+1.5	Sept. 5	5 3.4	5 1.7	5 2.5	+ .8	
14	4 11.7	4 9.2	4 10.2	+1.0	+1.5	12	5 3.8	5 2.0	5 2.5	+ .5	
21	5 1.0	4 10.5	4 11.5	+1.0	+1.5	19	5 4.0	5 4.5	+ .5	
28	5 1.8	4 11.1	5 .2	+1.1	+1.6	26	5 8.6	5 6.9	5 7.2	+ .3	
Oct. 5	5 5.0	5 1.7	5 3.2	+1.5	+1.8	Oct. 3	5 11.2	5 9.8	5 10.3	+ .5	
12	5 3.9	5 1.2	5 2.3	+1.1	+1.6	10	6 .0	5 10.4	5 11.1	+ .7	
19	5 5.4	5 6.3	5 2.8	5 4.0	+ .9	+1.2	+1.4	17	6 2.9	6 3.0	6 1.9	6 2.4	+ .1	+ .5	
26	5 6.3	5 7.0	5 4.1	5 5.1	+ .7	+1.0	+1.2	24	6 7.5	6 7.5	6 7.4	6 7.5	.0	+ .1	
Nov. 2	5 5.8	5 6.4	5 4.8	+ .6	+1.0	31	6 3.3	6 3.3	6 3.2	6 3.5	.0	— .2
9	5 4.5	5 5.2	5 3.5	+ .7	+1.0	Nov. 7	6 7.9	6 7.8	6 8.4	— .1	— .5
16	5 4.0	5 4.7	5 2.7	+ .7	+1.3	14	7 .5	7 .0	7 .5	— .50
23	5 3.8	5 4.6	5 1.9	+ .8	+1.9	21	6 9.6	6 9.2	6 9.2	— .4	+ .4
30	5 3.9	5 5.0	5 2.1	+1.1	+1.8	28	6 9.2	6 9.0	6 8.7	— .2	+ .5
Dec. 7	6 4.8	6 5.7	5 2.7	+ .9	+2.1	Dec. 5	6 11.1	6 10.8	6 10.8	— .3	+ .3
14	5 4.7	5 5.4	5 2.8	+ .7	+1.9	12	6 8.4	6 8.1	6 7.1	— .8	+1.3
21	5 3.6	5 4.2	5 2.0	+ .6	+1.6	19	6 8.4	6 8.40
28	5 4.1	5 4.9	5 2.4	+ .8	+1.7	26	6 9.4	6 9.40

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Sept.	Dec.	Mar.-May	May-July	July-Sept.	Sept.-Dec.	Dec.-Mar.		Mar.	May	July	Sept.	Dec.	Mar.-May	May-July	July-Sept.	Sept.-Dec.	Dec.-Mar.
1897																					
Jan. 2	6 11.2	6 11.2	6 9.1	.....	.....	.0	-2.1	.....	.....	.....	1898										
Jan. 9	6 11.7	6 11.9	6 10.5	.....	.....	+ .2	-1.4	.....	.....	.....	Jan. 1	7 5.8	7 4.0	7 1.0	6 7.8	.....	-1.8	-3.0	-5.7	.....	.....
Jan. 16	6 10.2	6 10.3	6 8.8	.....	.....	+ .1	-1.5	.....	.....	.....	Jan. 8	7 3.6	7 1.8	6 11.2	6 5.9	.....	-1.8	-2.6	-5.3	.....	.....
Jan. 23	6 9.1	6 9.4	6 7.9	.....	.....	+ .3	-1.5	.....	.....	.....	Jan. 15	7 1.9	7 .0	6 9.4	6 4.2	.....	-1.9	-2.6	-5.2	.....	.....
Jan. 30	6 6.8	6 7.0	6 5.6	.....	.....	+ .2	-1.4	.....	.....	.....	Jan. 22	7 4.4	7 1.6	6 10.8	6 5.6	.....	-2.8	-2.8	-5.2	.....	.....
Feb. 6	6 4.5	6 5.0	6 4.0	.....	.....	+ .5	-1.0	.....	.....	.....	Jan. 29	7 8.3	7 4.7	7 1.8	6 7.5	.....	-3.6	-2.9	-6.8	.....	.....
Feb. 13	6 3.8	6 4.7	6 4.2	.....	.....	+ .9	-.5	.....	.....	.....	Feb. 5	7 8.8	7 4.4	7 1.2	6 5.8	.....	-4.4	-3.2	-7.4	.....	.....
Feb. 20	6 3.2	6 4.4	6 3.9	.....	.....	+1.2	-.5	.....	.....	.....	Feb. 12	7 9.4	7 5.0	7 1.6	6 6.7	.....	-4.4	-3.4	-6.9	.....	.....
Feb. 27	6 2.9	6 4.5	6 4.0	.....	.....	+1.6	-.5	.....	.....	.....	Feb. 19	8 .4	7 5.4	7 2.4	6 7.5	.....	-6.0	-4.0	-6.9	.....	.....
Mar. 6	6 2.7	6 4.5	6 4.2	.....	.....	+1.8	-.8	.....	.....	.....	Feb. 26	7 11.8	7 6.3	7 3.1	6 7.4	.....	-5.5	-3.2	-7.7	.....	.....
Mar. 13	6 2.1	6 3.3	6 3.2	.....	.....	+1.2	-.1	.....	.....	.....	Mar. 5	7 10.4	7 5.1	7 1.7	6 6.4	6 5.4	-6.3	-3.4	-7.8	-1.0	.....
Mar. 20	6 1.4	6 2.7	6 2.9	6 1.4	.....	+1.3	+ .2	-1.5	.....	.....	Mar. 12	7 10.4	7 5.4	7 1.8	6 7.6	6 6.6	-5.0	-3.6	-6.2	-1.0	.....
Mar. 27	6 .6	6 2.0	6 1.9	6 .4	.....	+1.4	-.1	-1.5	.....	.....	Mar. 19	7 9.8	7 4.8	7 .0	6 6.8	6 6.3	-5.0	-3.9	-6.1	-.5	.....
Apr. 3	.....	6 11.7	5 11.7	5 10.3	.....	.....	.0	-1.4	.....	.....	Mar. 26	7 9.5	7 4.9	7 .5	6 6.4	6 6.0	-4.6	-4.4	-6.1	-.4	.....
Apr. 10	.....	5 8.2	5 8.2	5 7.5	.....	.....	.0	-.7	.....	.....	Apr. 2	.....	7 5.7	7 1.0	6 6.4	6 5.7	.....	-4.7	-6.6	-.7	.....
Apr. 17	.....	5 9.4	5 9.4	5 8.6	.....	.....	.0	-.8	.....	.....	Apr. 9	.....	7 7.0	7 3.8	6 7.4	6 7.1	.....	-3.7	-7.9	-.8	.....
Apr. 24	.....	6 2.4	6 2.2	6 1.2	.....	.....	-.2	-1.0	.....	.....	Apr. 16	.....	7 9.0	7 6.5	6 9.1	6 8.2	.....	-2.5	-9.4	-.9	.....
May 1	.....	5 11.3	6 .0	5 11.3	.....	.....	+ .7	-.7	.....	.....	Apr. 23	.....	8 .9	7 10.8	7 1.6	6 10.0	.....	-2.1	-9.2	-3.6	.....
May 8	.....	5 10.4	5 11.0	5 9.9	.....	.....	+ .6	-1.1	.....	.....	Apr. 30	.....	9 4.8	9 .0	7 8.0	7 1.7	.....	-4.8	-15.4	-6.9	.....
May 15	.....	6 .5	6 .9	6 .0	.....	.....	+ .4	-.9	.....	.....	May 7	.....	10 2.2	9 7.5	7 8.8	7 .3	.....	-6.7	-22.7	-8.5	.....
May 22	.....	5 10.8	6 10.4	5 9.2	.....	.....	+ .1	-1.2	.....	.....	May 14	.....	11 8.4	10 11.2	8 2.9	7 8.9	.....	-4.1	-32.4	-11.0	.....
May 29	.....	5 9.6	5 9.5	5 8.2	.....	.....	-.1	-1.3	.....	.....	May 21	.....	.....	10 7.2	7 11.8	7 3.1	.....	.....	-31.4	-8.7	.....
June 5	.....	5 7.7	6 6.5	5 7.4	.....	.....	-.9	+ .8	.....	.....	May 28	.....	.....	10 5.2	7 7.8	7 .6	.....	.....	-33.4	-7.2	.....
June 12	.....	5 8.4	5 7.1	5 7.8	.....	.....	-1.3	+ .5	.....	.....	June 4	.....	.....	9 5.4	7 1.3	6 9.2	.....	.....	-28.1	-4.1	.....
June 19	.....	5 8.7	5 6.9	5 7.0	.....	.....	-.8	+ .7	.....	.....	June 11	.....	.....	8 11.2	6 8.0	6 4.4	.....	.....	-27.2	-3.6	.....
June 26	.....	5 8.7	5 6.8	5 7.4	.....	.....	-1.9	+ .0	.....	.....	June 18	.....	.....	7 6.4	6 3.0	6 .5	.....	.....	-15.4	-2.5	.....
July 3	.....	5 8.0	5 6.1	5 6.8	.....	.....	-1.9	+ .7	.....	.....	June 25	.....	.....	6 5.8	5 11.0	5 8.9	.....	.....	-6.3	-2.1	.....
July 10	.....	5 9.8	5 7.2	5 7.8	.....	.....	-2.6	+ .6	.....	.....	July 2	.....	.....	6 4.8	5 10.5	5 8.5	.....	.....	-5.8	-2.0	.....
July 17	.....	6 1.2	5 8.9	6 9.0	.....	.....	-4.3	+ .1	.....	.....	July 9	.....	.....	6 8.3	6 .0	5 9.0	.....	.....	-8.3	-2.1	.....
July 24	.....	6 6.1	6 1.0	6 .1	.....	.....	-5.1	-.9	.....	.....	July 16	.....	.....	6 7.2	5 11.2	5 8.2	.....	.....	-8.0	-3.0	.....
July 31	.....	6 9.9	6 2.6	6 1.8	.....	.....	-7.3	-1.3	.....	.....	July 23	.....	.....	6 8.4	5 11.0	5 7.3	.....	.....	-0.4	-8.7	.....
Aug. 7	.....	.....	6 6.1	6 5.0	.....	.....	.....	-1.1	.....	.....	Aug. 6	.....	.....	6 5.9	5 8.2	5 6.1	.....	.....	-9.7	-3.1	.....
Aug. 14	.....	.....	6 9.1	6 7.2	.....	.....	.....	-1.9	.....	.....	Aug. 13	.....	.....	.....	5 8.0	5 6.8	.....	.....	.....	-3.3	.....
Aug. 21	.....	.....	7 3.2	7 1.7	.....	.....	.....	-1.5	.....	.....	Aug. 20	.....	.....	.....	5 10.7	5 5.8	.....	.....	.....	-5.4	.....
Aug. 28	.....	.....	7 9.5	7 7.3	.....	.....	.....	-2.5	.....	.....	Aug. 27	.....	.....	.....	5 9.7	5 4.1	.....	.....	.....	-5.6	.....
Sept. 4	.....	.....	7 7.5	7 5.8	.....	.....	.....	-1.7	.....	.....	Sept. 3	.....	.....	.....	5 6.4	5 3.0	.....	.....	.....	-3.4	.....
Sept. 11	.....	.....	7 11.6	7 6.6	.....	.....	.....	-2.1	.....	.....	Sept. 10	.....	.....	.....	5 5.8	5 3.2	.....	.....	.....	-2.6	.....
Sept. 18	.....	.....	7 11.3	7 8.2	.....	.....	.....	-3.1	.....	.....	Sept. 17	.....	.....	.....	5 5.4	5 2.8	.....	.....	.....	-3.1	.....
Sept. 25	.....	.....	7 11.3	7 6.4	.....	.....	.....	-4.9	.....	.....	Sept. 24	.....	.....	.....	6 8.2	5 4.1	.....	.....	.....	-4.1	+ .7
Oct. 2	.....	7 8.0	.....	7 11.4	7 4.2	.....	.....	-7.2	.....	.....	Oct. 1	.....	.....	.....	5 11.8	5 5.8	.....	.....	.....	-6.5	+ .5
Oct. 9	.....	7 8.7	.....	.....	7 5.1	.....	.....	.....	.....	.....	Oct. 8	.....	.....	.....	.....	5 5.0	.....	.....	.....	.....	-1.5
Oct. 16	.....	7 2.7	.....	.....	7 4.1	.....	.....	.....	.....	.....	Oct. 15	.....	.....	.....	.....	5 9.1	.....	.....	.....	.....	-1.3
Oct. 23	.....	7 2.4	.....	.....	7 4.8	.....	.....	.....	.....	.....	Oct. 22	.....	.....	.....	.....	6 1.0	.....	.....	.....	.....	-1.3
Oct. 30	.....	7 4.4	.....	.....	7 7.0	.....	.....	.....	.....	.....	Oct. 29	.....	.....	.....	.....	6 3.1	.....	.....	.....	.....	-1.5
Nov. 6	7 6.8	7 4.7	.....	.....	7 7.0	.....	.....	.....	.....	.....	Nov. 5	.....	.....	.....	.....	6 .9	.....	.....	.....	.....	-2.0
Nov. 13	7 4.9	7 3.8	.....	.....	7 4.7	.....	.....	.....	.....	.....	Nov. 12	.....	.....	.....	.....	6 1.0	.....	.....	.....	.....	-2.5
Nov. 20	7 5.3	7 3.4	.....	.....	7 4.6	.....	.....	.....	.....	.....	Nov. 19	.....	.....	.....	.....	6 1.4	.....	.....	.....	.....	-3.3
Nov. 27	7 6.5	7 5.4	.....	.....	7 5.0	.....	.....	.....	.....	.....	Nov. 26	.....	.....	.....	.....	6 .9	.....	.....	.....	.....	-2.4
Dec. 4	7 5.5	7 4.5	.....	.....	7 5.2	.....	.....	.....	.....	.....	Dec. 3	.....	.....	.....	.....	6 1.0	.....	.....	.....	.....	-2.9
Dec. 11	7 4.4	7 3.8	.....	.....	7 4.4	.....	.....	.....	.....	.....	Dec. 10	.....	.....	.....	.....	5 9.0	.....	.....	.....	.....	-1.7
Dec. 18	7 4.4	7 3.2	7 .7	6 8.0	7 4.5	.....	.....	.....	.....	.....	Dec. 17	.....	.....	.....	.....	5 10.4	.....	.....	.....	.....	-1.4
Dec. 25	7 5.4	7 4.0	7 .8	6 8.4	7 5.7	.....	.....	.....	.....	.....	Dec. 24	.....	.....	.....	.....	5 9.8	6 8.2	.....	.....	.....	-1.3
						.....	.....	.....	.....	.....	Dec. 31	.....	.....	.....	.....	5 10.9	5 9.0	.....	.....	.....	-2.5

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads							
	Mar.	May	July	Sept.	Dec.	Mar.—May	May—July	July—Sept.	Sept.—Dec.	Dec.—Mar.		Mar.	May	July	Sept.	Dec.	Mar.—May	May—July	July—Sept.	Sept.—Dec.	Dec.—Mar.			
1901																								
Jan. 5	6 2.2	6 2.6	.....	.....	.....	+ .4	.....	.....	.....	.....	Jan. 4	6 3.1	6 3.3	.....	.....	.....	.....	.....	.....	.....
12	6 2.6	6 2.8	.....	.....	.....	+ .2	.....	.....	.....	.....	11	6 4.2	6 4.4	.....	.....	.....	.....	.....	.....	+ .2				
19	6 1.1	6 1.3	.....	.....	.....	+ .2	.....	.....	.....	.....	18	6 2.7	6 3.1	.....	.....	.....	.....	.....	.....	+ .4				
26	6 1.2	6 1.5	.....	.....	.....	+ .3	.....	.....	.....	.....	25	6 1.8	6 2.2	.....	.....	.....	.....	.....	.....	+ .4				
Feb. 2	6 1.2	6 1.5	.....	.....	.....	+ .3	.....	.....	.....	.....	Feb. 1	6 1.2	6 1.6	.....	.....	.....	.....	.....	.....	+ .4				
9	5 11.8	6 .2	6 .5	.....	.....	+ .4	+ .3	.....	.....	.....	8	6 1.4	6 2.1	.....	.....	.....	.....	.....	.....	+ .7				
16	5 11.4	6 .0	6 .1	.....	.....	+ .6	+ .1	.....	.....	.....	15	6 1.6	6 2.0	.....	.....	.....	.....	.....	.....	+ .4				
23	5 11.2	6 .0	6 .2	.....	.....	+ .8	+ .2	.....	.....	.....	22	6 2.0	6 1.9	.....	.....	.....	.....	.....	.....	— .1				
Mar. 2	5 11.1	6 .0	6 .3	.....	.....	+ .9	+ .3	.....	.....	.....	Mar. 1	6 .8	6 .6	.....	.....	.....	.....	.....	.....	— .2				
9	5 10.5	5 11.5	5 11.8	.....	.....	+1.0	+ .3	.....	.....	.....	8	6 1.5	6 .8	6 .5	.....	.....	.....	.....	.....	— .7				
15	.....	6 .1	6 .1	.....	.....	.....	.0	.....	.....	.....	15	6 1.7	6 1.1	6 .6	.....	.....	.....	.....	.....	— .6				
23	.....	6 .8	6 .7	.....	.....	.....	— .1	.....	.....	.....	22	6 1.3	6 .3	5 11.8	.....	.....	.....	.....	.....	—1.0				
30	.....	6 .9	6 .8	.....	.....	.....	— .1	.....	.....	.....	29	6 .4	5 11.4	5 10.7	Basis duty paid		.....	.....	.....	.....	—1.0			
Apr. 6	.....	5 11.9	5 11.9	.....	.....	.....	.0	.....	.....	.....	Apr. 5	.....	5 11.1	5 10.4	Basis duty paid		.....	.....	.....	.....	— .7			
13	.....	5 9.6	5 9.9	5 9.9	.....	.....	+ .3	.0	.....	.....	12	.....	5 11.2	5 10.6	Basis duty paid		.....	.....	.....	.....	— .6			
20	.....	5 9.1	5 9.3	5 9.2	.....	.....	+ .2	— .1	.....	.....	19	.....	6 .4	5 11.3	Sept.	Dec.	.....	.....	.....	.....	—1.1			
27	.....	5 10.3	5 10.7	5 10.4	.....	.....	+ .4	— .3	.....	.....	26	.....	6 1.6	6 .7	.....	.....	.....	.....	.....	.....	— .9			
May 4	.....	5 10.9	5 11.2	5 10.9	.....	.....	+ .3	— .3	.....	.....	May 3	.....	6 1.8	6 1.4	6 3.4	.....	.....	.....	.....	.....	— .4			
11	.....	5 11.0	5 10.7	5 10.3	.....	.....	— .3	— .4	.....	.....	10	.....	6 1.4	6 1.2	6 8.1	.....	.....	.....	.....	.....	— .2			
18	.....	5 10.5	5 10.7	5 9.7	.....	.....	+ .2	—1.0	.....	.....	17	.....	6 1.6	6 1.6	6 8.5	.....	.....	.....	.....	.....	.0			
25	.....	.....	5 11.1	5 10.2	.....	.....	+ .2	— .9	.....	.....	24	.....	6 .8	6 .9	6 2.8	.....	.....	.....	.....	.....	+ .1			
June 1	.....	.....	5 11.4	5 10.7	.....	.....	.....	— .7	.....	.....	31	.....	.....	6 .0	6 1.6	.....	.....	.....	.....	.....	—1.1*			
8	.....	.....	5 11.3	5 10.5	.....	.....	.....	— .8	.....	.....	June 7	.....	.....	5 10.8	6 .7	.....	.....	.....	.....	.....	.....	— .8*		
15	.....	.....	5 9.4	5 9.1	.....	.....	.....	— .3	.....	.....	14	.....	.....	5 10.4	6 .8	.....	.....	.....	.....	.....	.....	— .3*		
22	.....	.....	5 8.0	5 7.9	5 8.6	.....	.....	— .1	+ .7	.....	21	.....	.....	5 11.0	6 1.7	.....	.....	.....	.....	.....	.....	.0*		
29	.....	.....	5 6.3	5 6.2	5 6.8	.....	.....	— .1	+ .6	.....	28	.....	.....	5 11.2	6 2.1	.....	.....	.....	.....	.....	.....	+ .2*		
July 6	.....	.....	5 6.3	5 6.1	5 6.9	.....	.....	— .2	+ .8	.....	July 5	.....	.....	5 11.8	6 2.9	.....	.....	.....	.....	.....	.....	.....	+ .4*	
13	.....	.....	5 5.4	5 5.1	5 6.0	.....	.....	— .3	+ .9	.....	12	.....	.....	6 .7	6 3.4	6 3.9	.....	.....	.....	.....	.....	.0*		
20	.....	.....	.....	5 6.7	5 7.7	.....	.....	.....	+1.0	.....	19	.....	.....	.....	6 2.0	6 1.9	.....	.....	.....	.....	.....	— .1		
27	.....	.....	.....	5 8.9	5 10.1	.....	.....	.....	+1.2	.....	26	.....	.....	.....	6 1.4	6 1.0	.....	.....	.....	.....	.....	— .4		
Aug. 3	.....	.....	.....	5 6.8	5 8.2	.....	.....	.....	+1.4	.....	Aug. 2	.....	.....	.....	6 .1	5 11.5	.....	.....	.....	.....	.....	— .6		
10	.....	.....	.....	5 8.1	5 9.4	.....	.....	.....	+1.3	.....	9	.....	.....	.....	5 11.5	5 10.7	.....	.....	.....	.....	.....	— .8		
17	.....	.....	.....	5 8.7	5 10.3	.....	.....	.....	+1.6	.....	16	.....	.....	.....	5 11.2	5 10.2	.....	.....	.....	.....	.....	—1.0		
24	.....	.....	.....	5 7.1	5 8.8	.....	.....	.....	+1.7	.....	23	.....	.....	.....	6 .1	5 10.5	.....	.....	.....	.....	.....	—1.6		
31	.....	.....	.....	5 6.8	5 8.5	.....	.....	.....	+1.7	.....	30	.....	.....	.....	5 11.4	5 10.3	.....	.....	.....	.....	.....	—1.1		
Sept. 7	.....	.....	.....	5 6.4	5 8.2	.....	.....	.....	+1.8	.....	Sept. 6	Basis duty paid			5 11.5	5 10.5	.....	.....	.....	.....	.....	.....	—1.0	
14	.....	.....	.....	5 6.1	5 7.8	.....	.....	.....	+1.7	.....	13	Basis duty paid			5 11.6	5 10.4	.....	.....	.....	.....	.....	.....	—1.2	
21	5 9.4	.....	.....	.....	5 8.0	.....	.....	.....	.....	+1.4	20	March	May	July	5 11.0	5 10.4	.....	.....	.....	.....	.....	.....	— .6	
28	5 9.1	.....	.....	.....	5 7.4	.....	.....	.....	.....	+1.7	27	.....	.....	.....	5 9.9	5 10.4	.....	.....	.....	.....	.....	.....	+ .5	
Oct. 5	5 8.2	.....	.....	.....	5 6.7	.....	.....	.....	.....	+1.5	Oct. 4	5 10.2	.....	.....	.....	5 9.9	.....	.....	.....	.....	.....	.....	.....	+ .3
12	5 8.2	.....	.....	.....	5 6.8	.....	.....	.....	.....	+1.4	11	5 10.2	.....	.....	.....	5 9.9	.....	.....	.....	.....	.....	.....	.....	+ .3
19	5 9.6	.....	.....	.....	5 8.3	.....	.....	.....	.....	+1.3	18	5 11.0	.....	.....	.....	5 10.4	.....	.....	.....	.....	.....	.....	.....	+ .6
26	5 10.2	.....	.....	.....	5 8.8	.....	.....	.....	.....	+1.4	25	5 11.0	.....	.....	.....	5 10.3	.....	.....	.....	.....	.....	.....	.....	+ .7
Nov. 2	5 9.8	.....	.....	.....	5 8.4	.....	.....	.....	.....	+1.4	Nov. 1	5 11.1	.....	.....	.....	5 10.2	.....	.....	.....	.....	.....	.....	.....	+ .9
9	5 10.8	5 11.4	.....	.....	5 9.4	.....	.....	.....	.....	+1.4	8	5 10.7	.....	.....	.....	5 9.9	.....	.....	.....	.....	.....	.....	.....	+ .8
16	5 11.0	5 11.7	.....	.....	5 9.4	.....	.....	.....	.....	+1.6	15	5 11.0	5 11.5	.....	.....	5 10.1	.....	.....	.....	.....	.....	.....	.....	+ .9
23	5 10.9	5 11.7	.....	.....	5 9.3	.....	.....	.....	.....	+1.6	22	6 .4	6 .8	.....	.....	5 11.0	.....	.....	.....	.....	.....	.....	.....	+1.4
30	5 11.3	6 .0	.....	.....	5 9.6	.....	.....	.....	.....	+1.7	29	6 .2	6 .4	.....	.....	5 11.0	.....	.....	.....	.....	.....	.....	.....	+1.2
Dec. 7	6 .9	6 1.8	.....	.....	5 11.4	.....	.....	.....	.....	+1.5	Dec. 6	5 11.9	5 11.9	.....	.....	5 11.0	.....	.....	.....	.....	.....	.....	.....	+ .9
14	6 2.0	6 2.9	.....	.....	6 .6	.....	.....	.....	.....	+1.4	13	6 1.0	6 .8	.....	.....	6 .5	.....	.....	.....	.....	.....	.....	.....	+ .5
21	6 2.0	6 2.8	.....	.....	6 1.3	.....	.....	.....	.....	+ .7	20	6 1.5	6 1.1	.....	.....	6 1.4	.....	.....	.....	.....	.....	.....	.....	+ .1
28	6 3.4	6 3.7	.....	.....	.....	.....	.....	.....	.....	+ .8	27	6 1.8	6 1.0	.....	.....	6 2.1	.....	.....	.....	.....	.....	.....	.....	— .8

* Duty of 2.68d. per 100 lbs. subtracted from price of September future.

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Sept.	Dec.	Mar.—May	May—July	July—Sept.	Sept.—Dec.	Dec.—Mar.		Mar.	May	July	Sept.	Dec.	Mar.—May	May—July	July—Sept.	Sept.—Dec.	Dec.—Mar.
1903											1904										
Jan. 3....	6 1.6	6 .5				-1.1					Jan. 2....	6 4.8	6 4.0			- .8					
10....	6 1.0	6 .0				-1.0					9....	6 5.6	6 5.2			- .4					
17....	6 2.2	6 1.2				-1.0					16....	6 4.9	6 4.6			- .3					
24....	6 4.4	6 3.0				-1.4					23....	6 4.8	6 3.8			-1.0					
31....	6 4.0	6 2.5				-1.5					30....	6 3.5	6 2.6			- .9					
Feb. 7....	6 3.7	6 2.4				-1.3					Feb. 6....	6 4.3	6 3.2			-1.1					
14....	6 3.8	6 2.3				-1.5					13....	6 5.8	6 4.9			- .9					
21....	6 3.1	6 1.8	6 1.3			-1.3	- .5				20....	6 7.8	6 6.8	6 6.7		-1.0	- .1				
28....	6 3.6	6 2.2	6 1.6			-1.4	- .6				27....		6 10.2	6 10.1		- .1					
Mar. 7....	6 3.7	6 2.1	6 1.6			-1.6	- .5				Mar. 5....		6 9.0	6 8.6		- .4					
14....	6 3.0	6 1.6	6 1.2			-1.4	- .4				12....		6 8.0	6 7.6		- .4					
21....		6 1.6	6 1.3				- .3				19....		6 7.8	6 7.4		- .4					
28....		6 1.1	6 .6				- .5				26....		6 7.1	6 7.0		- .1					
Apr. 4....	July	6 1.7	6 1.0	Grade A futures, ex-duty		6 1.7	- .7	Spreads between Grade A futures			Apr. 2....		6 7.9	6 8.0		+ .1					
11....		6 1.8	6 1.5	Sept.	Dec.		- .8	July—Sept. ^a	Sept.—Dec.	Dec.—Mar.	0....		6 6.8	6 7.0		+ .2					
18....	6 5.0	6 2.5	6 2.4				- .1				16....		6 5.7	6 6.0		+ .3					
25....	6 4.8	6 2.5	6 2.7				+ .2				23....		6 4.7	6 5.2		+ .5					
May 2....	6 5.1	6 4.2	6 3.6				- .6				30....		6 3.6	6 4.5		+ .9					
9....	6 5.3	6 4.8	6 4.2	6 1.7			- .6				May 7....		6 3.4	6 4.5		+1.1					
16....	6 5.4	6 5.0	6 3.9	6 1.7			-1.1				14....		6 3.3	6 4.5	6 5.1	+1.2	+ .6				
23....	6 5.5		6 3.8	6 1.8							21....			6 4.4	6 5.0		+ .6				
30....	6 5.3		6 3.3	6 1.5							28....			6 4.2	6 4.6		+ .4				
June 6....	6 5.7		6 3.8	6 2.2							June 4....			6 4.1	6 4.6		+ .5				
13....	6 5.4		6 3.3	6 1.9							11....			6 3.7	6 4.5		+ .8				
20....	6 5.9		6 3.8	6 2.5							18....			6 2.1	6 3.1		+1.0				
27....			6 4.8	6 3.6							25....			6 2.8	6 3.7		+ .9				
July 4....			6 5.1	6 3.2	6 2.8						July 2....			6 3.8	6 4.7		+ .9				
11....			6 6.4	6 3.5	6 3.2						9....			6 5.2	6 6.2		+1.0				
18....			6 6.8	6 3.4	6 3.3						16....			6 6.1	6 7.3	6 7.5	+1.2	+ .2			
25....				6 2.7	6 2.5						23....			6 7.7	6 8.8	6 8.8	+1.1	.0			
Aug. 1....				6 3.8	6 3.4						30....				6 8.5	6 8.9		+ .4			
8....				6 4.6	6 4.4						Aug. 6....				6 10.5	6 11.2		+ .7			
15....				6 5.7	6 5.7						13....				6 11.9	7 1.1		+1.2			
22....				6 6.3	6 6.6						20....				7 3.4	7 4.7		+1.3			
29....				6 6.4	6 6.7						27....				7 4.5	7 6.2		+1.7			
Sept. 5....				6 6.1	6 6.8						Sept. 3....				7 3.6	7 5.6		+2.0			
12....				6 5.9	6 6.5						10....				7 2.2	7 4.5		+2.3			
19....				6 4.8	6 5.9						17....				7 5.4	7 7.7		+2.3			
26....				6 3.3	6 4.2						24....				7 5.0	7 7.1		+2.1			
Oct. 3....	Grade A futures, ex-duty				6 3.8	Grade A future					Oct. 1....	7 9.5							+1.5		
10....					6 4.1						8....	7 7.8							+1.2		
17....	Mar.	May	July		6 5.3	Mar.—May	May—July				15....	7 7.0							+1.6		
24....					6 5.5						22....	7 6.3							+1.4		
31....	6 6.2				6 6.0						29....	7 6.5	7 5.8						+1.3		
Nov. 7....	6 5.5	6 4.4			6 5.5	-1.1					Nov. 5....	7 5.1	7 4.5						+1.3		
14....	6 4.3	6 3.4			6 4.7	- .9					12....	7 4.6	7 4.2						+1.9		
21....	6 3.9	6 2.6			6 4.7	-1.3					19....	7 4.0	7 3.8						+1.9		
28....	6 4.2	6 2.7			6 5.6	-1.5					26....	7 3.2	7 3.1						+1.7		
Dec. 5....	6 4.5	6 3.4			6 5.0	-1.1					Dec. 3....	7 4.0	7 4.0						+2.2		
12....	6 4.4	6 3.0				-1.4					10....	7 4.1	7 4.2								
19....	6 4.2	6 3.8				- .9					17....	7 3.1	7 3.2								
26....	6 4.5	6 3.8				- .7					24....	7 1.6	7 1.6								
											31....	7 .2	7 .2								

^a Duty of 2.68d. per 100 lbs. subtracted from price of July future.

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads									
	Mar.	May	July	Sept.	Dec.	Mar.—May	May—July	July—Sept.	Sept.—Dec.	Dec.—Mar.		Mar.	May	July	Sept.	Dec.	Mar.—May	May—July	July—Sept.	Sept.—Dec.	Dec.—Mar.					
1905											1906															
Jan. 7...	7 1.0	7 .6	7 .7	.....	.....	-.4	+ .1	.....	.....	.....	Jan. 6...	6 11.4	6 10.1	.....	.....	-1.3	.....	.....	.....	.....		
14...	7 .9	7 .3	7 .3	.....	.....	-.6	.0	.....	.....	.....	13...	6 11.6	6 9.9	.....	.....	-1.7	.....	.....	.....	.....		
21...	7 .4	6 11.2	6 11.2	.....	.....	-1.2	.0	.....	.....	.....	20...	7 .3	6 10.6	.....	.....	-1.7	.....	.....	.....	.....		
28...	7 1.5	7 .8	7 .6	.....	.....	-.7	-.2	.....	.....	.....	27...	6 11.7	6 9.7	6 9.7	.....	-2.0	.0	.....	.....	.....			
Feb. 4...	7 .8	6 11.8	6 11.7	.....	.....	-1.0	-.1	.....	.....	.....	Feb. 8...	6 10.5	6 8.6	6 8.4	.....	-1.9	-.2	.....	.....	.....			
11...	7 .6	6 11.5	6 11.4	.....	.....	-1.1	-.1	.....	.....	.....	10...	6 10.6	6 8.6	6 8.3	.....	-2.0	-.3	.....	.....	.....			
18...	7 .8	6 11.9	6 11.9	.....	.....	-.9	.0	.....	.....	.....	17...	6 9.8	6 7.8	6 7.4	.....	-2.0	-.4	.....	.....	.....			
25...	7 .2	6 11.6	6 11.7	.....	.....	-.6	+ .1	.....	.....	.....	24...	6 8.1	6 6.4	6 6.1	.....	-1.7	-.3	.....	.....	.....			
Mar. 4...	6 11.7	6 11.5	6 11.6	.....	.....	-.2	+ .1	.....	.....	.....	Mar. 3...	6 8.1	6 6.5	6 6.3	.....	-1.6	-.2	.....	.....	.....			
11...	.....	6 9.6	6 9.9	.....	.....	.....	+ .3	.....	.....	.....	10...	6 6.5	6 5.3	6 5.2	.....	-1.2	-.1	.....	.....	.....			
18...	.....	6 8.9	6 9.1	6 8.2	.....	.....	+ .2	-.9	.....	.....	17...	6 6.5	6 5.5	6 5.4	.....	-1.0	-.1	.....	.....	.....			
25...	.....	6 8.3	6 8.9	6 8.4	.....	.....	+ .6	-.5	.....	.....	24...	.....	6 6.8	6 6.6	.....	.....	-.2	.....	.....	.....			
Apr. 1...	.....	6 7.1	6 7.6	6 7.1	.....	.....	+ .5	-.5	.....	.....	31...	.....	6 6.8	6 6.2	.....	.....	-.6	.....	.....	.....			
8...	.....	6 6.4	6 6.9	6 6.2	.....	.....	+ .5	-.7	.....	.....	Apr. 7...	.....	6 7.7	6 6.9	6 6.6	.....	.....	-.8	-.3	.....	.....			
15...	.....	6 7.2	6 7.7	6 6.6	.....	.....	+ .5	-.1	.....	.....	14...	.....	6 8.0	6 7.0	6 6.8	.....	.....	-1.0	-.2	.....	.....			
22...	.....	6 7.5	6 7.8	6 6.9	.....	.....	+ .3	-.9	.....	.....	21...	.....	6 8.0	6 7.6	6 7.4	.....	.....	-1.4	-.2	.....	.....			
29...	.....	6 6.0	6 6.5	6 5.0	.....	.....	+ .5	-.5	.....	.....	28...	.....	6 8.9	6 7.6	6 7.2	.....	.....	-1.3	-.4	.....	.....			
May 6...	.....	6 6.1	6 6.6	6 4.7	.....	.....	+ .5	-.9	.....	.....	May 5...	.....	6 9.1	6 7.4	6 6.9	.....	.....	-1.7	-.5	.....	.....			
13...	.....	6 6.5	6 7.3	6 5.4	.....	.....	+ .8	-.9	.....	.....	12...	.....	6 8.8	6 7.6	6 6.8	.....	.....	-1.2	-.8	.....	.....			
20...	.....	6 8.0	6 9.2	6 7.7	.....	.....	+1.2	-.5	.....	.....	19...	.....	6 8.4	6 7.6	6 7.0	.....	.....	-.8	-.6	.....	.....			
27...	.....	.....	6 9.8	6 8.8	.....	.....	.....	-.5	.....	.....	26...	.....	.....	6 6.9	6 7.0	6 6.9	.....	.....	.....	+ .1	-.1
June 3...	.....	.....	6 9.7	6 8.0	.....	.....	.....	-.7	.....	.....	June 2...	.....	.....	6 6.4	6 6.6	6 6.6	.....	.....	.....	+ .2	.0
10...	.....	.....	6 9.8	6 7.8	6 6.8	.....	.....	-2.0	-1.0	.....	9...	.....	.....	6 6.3	6 6.6	6 6.7	.....	.....	.....	+ .3	+ .1
17...	6 10.1	6 8.4	6 7.3	-.7	-1.1	16...	6 7.0	6 7.8	6 7.6	+ .8	-.2				
24...	6 10.0	6 8.8	6 8.0	-1.2	-.8	23...	6 7.4	6 8.3	6 8.2	+ .9	-.1				
July 1...	6 10.7	6 10.0	6 9.3	-.7	-.7	30...	6 7.4	6 8.0	6 7.8	+ .6	-.2				
8...	6 11.2	6 10.9	6 10.5	-.3	-.4	July 7...	6 6.7	6 6.9	6 7.0	+ .2	+ .1				
15...	6 9.4	6 8.9	-.5	14...	6 6.9	6 6.6	6 6.8	-.3	+ .2				
22...	6 8.3	6 7.2	-1.1	21...	6 7.8	6 7.3	6 7.7	-.5	+ .4				
29...	6 8.9	6 7.8	-1.1	28...	6 7.2	6 6.6	6 7.5	-.6	+ .9				
Aug. 5...	6 8.6	6 7.3	-1.3	Aug. 4...	6 5.0	6 6.1	+1.1			
12...	6 8.3	6 7.3	-1.0	11...	6 3.8	6 5.0	+1.2			
19...	6 7.5	6 6.6	-.9	18...	6 2.9	6 4.3	+1.4			
26...	6 8.4	6 7.1	-1.3	95...	6 2.2	6 3.7	+1.5			
Sept. 2...	6 8.1	6 6.8	-1.3	Sept. 1...	6 1.8	6 3.4	+1.6		
9...	6 7.4	6 9.2	6 7.6	-1.6	-.2	8...	6 1.6	6 3.0	+1.4		
16...	6 7.4	6 7.8	-.4	15...	6 .6	6 2.1	+1.5	
23...	6 8.2	6 8.7	-.5	22...	6 2.2	6 3.7	+1.5
30...	6 8.6	6 9.2	-.6	29...	6 5.8	6 3.3	6 5.0	+1.7	+ .8
Oct. 7...	6 8.2	6 8.9	-.7	Oct. 6...	6 5.8	6 5.4	+ .4
14...	6 9.5	6 8.9	6 10.5	-.6	-1.0	13...	6 5.4	6 4.9	+ .5
21...	6 10.0	6 9.5	6 10.7	-.5	-.7	20...	6 5.8	6 5.4	+ .4
28...	7 .5	7 .1	7 .7	-.4	-.2	27...	6 5.2	6 4.9	+ .3
Nov. 4...	7 1.2	7 .6	7 1.2	-.60	Nov. 3...	6 5.6	6 5.1	+ .5
11...	7 .4	6 11.5	7 .3	-.9	+ .1	10...	6 5.3	6 4.7	6 4.4	+ .9
18...	7 .4	6 11.2	7 .4	-1.20	17...	6 5.5	6 4.9	6 4.1	+1.4	
25...	6 11.3	6 10.1	6 11.2	-1.2	+ .1	24...	6 5.8	6 5.3	6 4.0	+1.8	
Dec. 2...	6 11.2	6 9.9	6 11.1	-1.3	+ .1	Dec. 1...	6 5.7	6 5.2	6 3.6	+2.1
9...	6 11.7	6 10.3	6 11.4	-1.4	+ .3	8...	6 5.4	6 4.8	6 3.4	+2.0	
16...	7 .2	6 10.7	6 11.6	-1.5	+ .6	15...	6 5.6	6 4.9
23...	6 11.7	6 10.2	6 10.6	-1.5	+1.1	22...	6 5.1	6 4.3
30...	6 10.5	6 9.2	-1.3	29...	6 5.0	6 4.3

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Sept.	Dec.	Mar.-May	May-July*	July-Sept.	Sept.-Dec.	Dec.-Mar.		Mar.	May	July	Sept.	Dec.	Mar.-May	May-July	July-Sept.	Sept.-Dec.	Dec.-Mar.
1907											1908										
Jan. 5	6 4.3	6 3.6	6 2			-.7	(-3.4)				Jan. 4	8 .6	7 11.8								
12	6 3.9	6 3.2	5 11.9			-.6	(-3.4)				11	8 1.0	8 .3								
19	6 4.0	6 3.2	6 1			-.8	(-3.1)				18	7 11.2	7 10.4								
26	6 5.5	6 4.6	6 1.5			-.9	(-3.1)				25	7 8.0	7 7.7								
Feb. 2	6 5.9	6 4.9	6 1.9			-1.0	(-3.0)				Feb. 1	7 6.0	7 6.0	7 6.6							
9	6 6.8	6 5.9	6 3.0			-.9	(-2.9)				8	7 5.8	7 5.7	7 6.6							
16	6 6.8	6 6.4	6 3.5			-.4	(-2.9)				15	7 2.3	7 2.3	7 3.4							
23	6 6.0	6 5.4	6 2.5			-.6	(-2.9)				22	6 9.8	6 10.6	6 11.8							
Mar. 2	6 5.9	6 5.6	6 2.8			-.3	(-2.8)				29	7 .2	7 1.2	7 2.8							
9	6 5.0	6 5.3	6 2.4			+.3	(-2.9)				Mar. 7	7 2.4	7 3.0	7 4.5							
16	6 4.9	6 5.5	6 2.7			+.6	(-2.8)				14	6 11.6	6 11.8	7 1.4							
23	6 4.8	6 4.8	6 2.0			+.5	(-2.8)				21		7 .2	7 1.7							
30	6 4.2	6 4.6	6 2.0			+.4	(-2.6)				28		6 11.7	7 1.2							
Apr. 6		6 4.6	6 2.3				(-2.3)				Apr. 4		6 11.4	7 .8	7 .0						
13		6 4.8	6 2.8				(-2.0)				11		6 11.0	7 .4	6 11.0						
20		6 5.5	6 3.5				(-2.0)				18		6 11.4	7 .7	6 10.4						
27		6 6.1	6 4.8	6 6.1			(-1.3)	+1.3			25		7 3.6	7 5.0	7 .8						
May 4		6 6.8	6 5.7	6 6.8			(-1.1)	+1.1			May 2		7 3.1	7 5.1	7 .6						
11		6 7.9	6 6.5	6 8.0			(-1.4)	+1.5			9		7 5.7	7 7.7	7 3.2						
18		(End of trading in Grade A futures)	6 11.6	7 .8				+1.2			16		7 5.8	7 7.1	7 2.4	7 1.3					
25			7 2.6	7 4.2				+1.6			23			7 6.5	7 2.6	7 1.8					
June 1			7 2.2	7 3.8				+1.6			30			7 6.7	7 2.7	7 1.9					
8			7 .7	7 2.4				+1.7			June 6			7 5.5	7 1.4	7 .6					
15			6 11.2	7 1.2				+2.0			13			7 1.4	6 10.7	6 10.1					
22			6 11.0	7 1.1				+2.1			20			7 3.1	7 .0	6 11.5					
29			7 .4	7 2.6				+2.2			27			7 1.2	6 10.8	6 10.2					
July 6			7 3.2	7 5.3	7 7.8			+2.1	+2.5		July 4			7 1.9	7 .0	6 11.6					
13			7 2.1	7 3.7	7 5.7			+1.6	+2.0		11			7 3.6	7 1.9	7 1.9					
20			7 1.9	7 3.3	7 5.2			+1.4	+1.9		18			7 6.6	7 4.0	7 3.9					
27			7 1.6	7 2.9	7 4.8			+1.3	+1.9		25			7 7.3	7 4.1	7 3.8					
Aug. 3	7 4.2			7 2.7	7 4.9				+2.2	-.7	Aug. 1				7 3.2	7 2.8					
10	7 4.0			7 1.6	7 4.0				+2.4	.0	8				7 6.2	7 5.7					
17	7 3.2			7 .2	7 2.4				+2.2	+.8	15				7 4.7	7 5.2					
24	7 6.6			7 3.3	7 5.6				+2.3	+1.0	22				7 4.1	7 5.3					
31	7 9.3			7 5.4	7 8.2				+2.8	+1.1	29				7 4.5	7 5.6					
Sept. 7	7 11.4			7 7.8	7 10.4				+2.6	+1.0	Sept. 5				7 5.8	7 6.3					
14	7 10.4			7 7.1	7 9.6				+2.5	+.8	12				7 6.0	7 6.2					
21	8 1.0			7 9.8	7 11.9				+2.1	+1.1	19	7 6.8			7 8.0	7 8.0					
28	8 1.0			7 9.4	7 11.6				+2.2	+1.4	26	7 7.6			7 9.2	7 9.1					
Oct. 5	8 2.6	8 2.0			8 1.6				+1.0	+1.0	Oct. 3	7 6.7	7 6.2			7 8.3					
12	8 7.0	8 6.3			8 6.2				+.8	+.8	10	7 6.2	7 5.6			7 8.3					
19	8 7.0	8 6.2			8 6.1				+.9	+.9	17	7 5.3	7 4.8			7 8.2					
26	8 6.9	8 6.1			8 5.6				+1.3	+1.3	24	7 5.7	7 5.2			7 8.0					
Nov. 2	8 5.4	8 4.6			8 3.8				+1.6	+1.6	31	7 7.1	7 6.7			7 8.4					
9	8 2.1	8 1.2			8 .1				+.9	+.9	Nov. 7	7 8.1	7 7.8			7 9.6					
16	8 2.6	8 2.0			8 .0				+.6	+.6	14	7 9.3	7 8.8			7 11.6					
23	8 2.6	8 2.1			7 11.8				+2.6	+2.6	21	7 9.2	7 8.5			7 11.4					
30	8 2.5	8 1.9			7 11.2				+3.3	+3.3	28	7 8.4	7 7.9			7 10.8					
Dec. 7	7 11.7	7 11.1			7 8.7				+.6	+3.0	Dec. 5	7 9.7	7 9.2			8 .3					
14	7 9.4	7 8.7							-.7	-.7	12	7 8.7	7 7.9			8 .3					
21	8 .2	7 11.5							-.7	-.7	19	7 7.0	7 6.1			7 11.4					
28	7 11.4	7 10.7							-.7	-.7	26	7 6.4	7 5.7			7 10.9					

* Spread greatly affected by difference in terms of contract (see p. 148).

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Sept.	Dec.	Mar.—May	May—July	July—Sept.	Sept.—Dec.	Dec.—Mar.		Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.
1909																					
Jan. 2	7 7.4	7 6.9	.....	.....	.....	-.5	.....	.....	.....	.....	Jan. 1	8 .6	7 10.5	.....	.....	-2.1	.....	.....	.....	.....
9	7 7.4	7 6.7	.....	.....	.....	-.7	.....	.....	.....	.....	8	8 4.5	8 2.8	.....	.....	-2.2	.....	.....	.....	.....
16	7 6.6	7 5.9	7 6.3	.....	.....	-.7	+ .4	.....	.....	.....	15	8 4.2	8 1.8	.....	.....	-2.4	.....	.....	.....	.....
22	7 7.4	7 6.5	7 7.0	.....	.....	-.9	+ .5	.....	.....	.....	22	8 2.6	8 .1	7 11.3	.....	-2.5	-.8	.....	.....	.....
30	7 8.4	7 7.2	7 7.7	.....	.....	-1.2	+ .5	.....	.....	.....	29	8 3.7	8 1.1	8 .0	.....	-2.6	-1.1	.....	.....	.....
Feb. 6	7 9.8	7 8.6	7 9.1	.....	.....	-1.2	+ .5	.....	.....	.....	Feb. 5	8 2.8	8 .1	7 10.8	.....	-2.7	-1.3	.....	.....	.....
13	7 11.4	7 10.4	7 10.9	.....	.....	-1.0	+ .5	.....	.....	.....	12	8 1.4	7 11.3	7 10.4	.....	-2.1	-.9	.....	.....	.....
20	7 10.9	7 10.2	7 10.7	.....	.....	-.7	+ .5	.....	.....	.....	19	8 2.2	8 .2	7 11.1	.....	-2.0	-1.1	.....	.....	.....
27	8 1.5	8 1.4	8 2.4	7 11.4	.....	-.1	+1.0	-3.0	.....	.....	26	8 1.1	7 11.0	7 10.0	.....	-2.1	-1.0	.....	.....	.....
Mar. 6	8 2.0	8 1.8	8 2.8	7 10.8	.....	-.2	+1.0	-4.0	.....	.....	Mar. 5	8 1.4	7 11.1	7 10.4	.....	-2.3	-.7	.....	.....	.....
13	8 1.1	8 1.4	8 2.6	7 10.8	.....	+ .3	+1.2	-4.3	.....	.....	12	8 1.3	7 10.1	7 9.9	.....	-3.2	-.2	.....	.....	.....
20	8 2.4	8 2.5	8 3.9	7 10.8	.....	+ .1	+1.4	-5.1	.....	.....	19	8 2.8	7 11.7	7 11.3	7 9.1	-3.1	-.4	-2.2	.....	.....
27	8 2.9	8 2.5	8 3.9	7 10.7	.....	-.4	+1.4	-5.2	.....	.....	26	8 2.6	7 11.5	7 11.3	7 9.8	-3.1	-.2	-1.5	.....	.....
Apr. 3	.....	8 4.8	8 6.0	8 .7	.....	.....	+1.2	-5.3	.....	.....	Apr. 2	.....	8 .5	8 .1	7 10.4	.....	-.4	-1.7	.....	.....
10	.....	8 3.3	8 9.4	8 3.6	.....	.....	+1.1	-5.8	.....	.....	9	.....	7 11.4	7 10.6	7 8.7	.....	-.8	-1.9	.....	.....
17	.....	9 1.4	9 2.8	8 7.8	.....	.....	+1.4	-7.0	.....	.....	16	.....	7 10.1	7 9.1	7 7.2	.....	-1.0	-1.9	.....	.....
24	.....	8 9.7	8 11.6	8 4.6	.....	.....	+1.9	-7.0	.....	.....	23	.....	7 7.6	7 7.0	7 6.0	.....	-.6	-1.0	.....	.....
May 1	.....	8 7.8	8 9.4	8 2.6	.....	.....	+1.6	-6.8	.....	.....	30	.....	7 5.0	7 5.0	7 5.1	.....	.0	+ .1	.....	.....
8	.....	9 .8	9 1.3	8 5.6	.....	.....	+ .5	-7.7	.....	.....	May 7	.....	7 3.4	7 3.6	7 4.4	.....	+ .2	+ .8	.....	.....
15	.....	8 11.6	8 11.6	8 4.8	8 8.4	.....	.0	-6.8	-1.4	.....	May 14	.....	7 1.6	7 2.2	7 3.0	.....	+ .6	+ .8	.....	.....
22	.....	9 .3	9 .4	8 6.0	8 3.8	.....	+ .1	-6.4	-2.2	.....	21	.....	6 11.3	6 11.6	7 .9	.....	+ .3	+1.3	.....	.....
29	.....	9 .3	9 .4	8 6.0	8 3.4	.....	+ .1	-6.4	-2.6	.....	28	.....	6 5.8	6 6.3	6 8.2	.....	+ .5	+1.9	.....	.....
June 5	.....	.....	8 11.3	8 5.9	8 3.9	.....	.....	-5.4	-2.0	.....	June 4	.....	.....	6 4.1	6 5.7	.....	.....	+1.6	.....	.....
12	.....	.....	9 0.3	8 7.1	8 4.7	.....	.....	-5.2	-2.4	.....	11	.....	.....	6 5.9	6 7.4	.....	.....	+1.5	.....	.....
19	.....	.....	8 11.5	8 5.7	8 3.7	.....	.....	-5.8	-2.0	.....	18	.....	.....	6 4.6	6 6.4	.....	.....	+1.3	.....	.....
26	.....	.....	9 1.1	8 6.8	8 4.7	.....	.....	-6.3	-2.1	.....	25	.....	.....	6 6.4	6 8.4	.....	.....	+2.0	.....	.....
July 3	.....	.....	9 3.7	8 7.9	8 6.3	.....	.....	-7.3	-1.6	.....	July 2	.....	.....	6 7.6	6 9.6	6 10.7	.....	+2.0	+1.1	.....
10	.....	.....	9 4.0	8 7.2	8 5.6	.....	.....	-8.8	-1.6	.....	9	.....	.....	6 9.4	6 11.0	7 .0	.....	+1.6	+1.0	.....
17	.....	.....	9 6.5	8 9.3	8 5.8	.....	.....	-9.2	-3.5	.....	16	.....	.....	7 .6	7 2.2	7 3.3	.....	+1.6	+1.1	.....
24	.....	.....	9 6.4	8 7.8	8 3.9	.....	.....	-10.6	-3.9	.....	23	.....	.....	7 6.4	7 8.0	7 8.9	.....	+1.6	+ .9	.....
31	.....	.....	9 4.2	8 3.9	8 .5	.....	.....	-12.3	-3.4	.....	30	.....	.....	7 5.8	7 6.8	7 7.8	.....	+1.0	+1.0	.....
Aug. 7	7 9.3	7 9.3	.....	8 2.8	7 9.5	.0	.....	-5.3	-.2	.....	Aug. 6	.....	.....	.....	7 5.7	7 6.6	.....	.....	+ .9	.....
14	7 6.4	7 6.4	.....	8 .4	7 7.1	.0	.....	-5.3	-.7	.....	13	.....	.....	.....	7 7.8	7 8.8	.....	.....	+1.0	.....
21	7 8.1	7 8.1	.....	8 3.4	7 8.9	.0	.....	-6.5	-.8	.....	20	7 9.0	.....	.....	7 7.4	7 8.4	.....	.....	+1.0	+ .6
28	7 6.0	7 6.0	.....	7 11.5	7 6.0	.0	.....	-5.5	.0	.....	27	7 7.8	.....	.....	7 6.2	7 7.2	.....	.....	+1.0	+ .6
Sept. 4	7 5.2	7 5.2	.....	7 8.1	7 4.9	.0	.....	-3.2	+ .3	.....	Sept. 3	7 8.3	.....	.....	7 6.8	7 7.6	.....	.....	+ .8	+ .7
11	7 6.3	7 6.1	.....	7 7.1	7 5.6	-.2	.....	-1.5	+ .7	.....	10	7 6.8	.....	.....	7 5.4	7 6.1	.....	.....	+ .7	+ .7
18	7 7.5	7 7.2	.....	7 8.0	7 7.2	-.8	.....	-.9	+ .3	.....	17	7 4.5	.....	.....	7 3.2	7 4.0	.....	.....	+ .8	+ .5
25	7 7.0	7 6.6	.....	7 8.0	7 6.8	-.4	.....	-1.2	+ .2	.....	24	7 5.3	.....	.....	7 4.3	7 4.9	.....	.....	+ .6	+ .4
Oct. 2	7 7.1	7 6.8	.....	.....	7 6.5	-.3	.....	.....	+ .6	.....	Oct. 1	7 3.9	.....	.....	7 3.4	7 3.8	.....	.....	+ .4	+ .1
9	7 8.4	7 8.0	.....	.....	7 8.3	-.4	.....	.....	+ .1	.....	8	7 5.1	.....	.....	7 4.6	7 4.9	.....	.....	+ .3	+ .2
16	7 9.3	7 8.7	.....	.....	7 10.3	-.6	.....	.....	-1.0	.....	15	7 3.4	.....	.....	7 2.8	7 3.4	.....	.....	+ .6	.0
23	7 7.4	7 6.9	.....	.....	7 8.6	-.5	.....	.....	-1.2	.....	22	7 3.1	.....	.....	7 2.5	7 3.1	.....	.....	+ .6	.0
30	7 8.1	7 7.4	.....	.....	7 9.9	-.7	.....	.....	-1.8	.....	29	7 1.3	.....	.....	7 .7	7 1.0	.....	.....	+ .3	+ .3
Nov. 6	7 7.3	7 6.4	.....	.....	7 9.8	-.9	.....	.....	-2.5	.....	Nov. 5	6 11.1	.....	.....	.....	6 10.1	.....	.....	.....	+1.0
13	7 8.0	7 7.0	.....	.....	7 10.9	-1.0	.....	.....	-2.9	.....	12	6 11.9	6 11.8	.....	.....	6 10.8	.....	.....	.....	+1.1
20	7 8.7	7 7.4	.....	.....	8 .7	-1.3	.....	.....	-4.0	.....	19	7 1.4	7 1.5	.....	.....	6 11.7	.....	.....	.....	+1.7
27	7 9.3	7 7.8	.....	.....	8 1.4	-1.5	.....	.....	-4.1	.....	26	7 2.4	7 2.9	.....	.....	7 .0	.....	.....	.....	+2.4
Dec. 4	7 7.8	7 6.3	.....	.....	8 1.2	-1.5	.....	.....	-5.4	.....	Dec. 3	7 .4	7 1.1	.....	.....	6 9.8	.....	.....	.....	+2.6
11	7 9.0	7 7.5	.....	.....	8 1.2	-1.5	.....	.....	-4.2	.....	10	6 11.9	7 .4	.....	.....	6 9.6	.....	.....	.....	+2.3
18	7 11.5	7 9.7	.....	.....	8 2.5	-1.8	.....	.....	-3.0	.....	17	6 11.8	7 .4	.....	.....	6 9.8	.....	.....	.....	+2.0
25	7 11.8	7 9.8	.....	.....	8 1.9	-2.0	.....	.....	-2.1	.....	24	6 11.4	6 11.9	.....	.....	6 9.4	.....	.....	.....	+2.0
											31	7 .4	7 1.0	.....	.....	6 10.8	.....	.....	.....	+1.6

TABLE III.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1911																					
Jan. 7....	7 1.4	7 1.9	.....	.....	.....	+ .5	.....	.....	.....	.....	Jan. 6....	7 6.2	7 4.8	7 5.1	.....	.....	-1.4	+ .3	.....	.....
14....	7 1.8	7 2.4	.....	.....	.....	+ .6	.....	.....	.....	.....	13....	7 6.4	7 4.7	7 4.8	.....	.....	-1.7	+ .1	.....	.....
21....	7 1.0	7 1.3	.....	.....	.....	+ .3	.....	.....	.....	.....	20....	7 7.1	7 5.1	7 5.8	.....	.....	-2.0	+ .2	.....	.....
28....	7 1.1	7 .7	.....	.....	.....	-.4	.....	.....	.....	.....	27....	7 7.6	7 5.7	7 5.2	.....	.....	-2.5	+ .1	.....	.....
Feb. 4....	7 .4	7 .0	.....	.....	.....	-.4	.....	.....	.....	.....	Feb. 3....	7 8.5	7 5.6	7 5.7	.....	.....	-2.9	+ .1	.....	.....
11....	7 .4	6 11.8	.....	.....	.....	-.6	.....	.....	.....	.....	10....	7 11.0	7 7.1	7 6.7	.....	.....	-3.0	-.4	.....	.....
18....	7 .1	6 11.1	6 11.2	.....	.....	-1.0	+ .1	.....	.....	.....	17....	7 10.2	7 5.5	7 4.8	.....	.....	-4.7	-.7	.....	.....
25....	6 10.9	6 9.9	6 9.6	.....	.....	-1.0	-.3	.....	.....	.....	24....	7 9.9	7 4.8	7 4.1	.....	.....	-5.1	-.7	.....	.....
Mar. 4....	6 9.2	6 8.9	6 8.8	.....	.....	-.8	-.1	.....	.....	.....	Mar. 2....	7 10.3	7 6.2	7 4.8	.....	.....	-5.1	-.4	.....	.....
11....	6 8.8	6 9.1	6 9.1	.....	.....	+ .3	.0	.....	.....	.....	9....	7 11.5	7 6.2	7 5.4	.....	.....	-5.8	-.8	.....	.....
18....	6 9.0	6 9.4	6 9.4	.....	.....	+ .4	.0	.....	.....	.....	16....	8 1.4	7 6.8	7 5.7	.....	.....	-6.6	-1.1	.....	.....
25....	6 8.3	6 8.6	6 8.7	.....	.....	+ .3	+ .1	.....	.....	.....	23....	8 2.6	7 8.1	7 6.1	7 4.0	.....	-6.5	-2.0	-2.1	.....
Apr. 1....	.....	6 7.2	6 7.1	6 7.1	.....	.....	-.1	.0	.....	.....	Apr. 30....	.....	7 8.9	7 7.2	7 4.7	.....	.....	-1.7	-2.5	.....	.....
8....	.....	6 7.5	6 7.1	6 7.0	.....	.....	-.4	-.1	.....	.....	Apr. 8....	.....	7 10.5	7 7.9	7 4.6	.....	.....	-2.6	-3.3	.....	.....
15....	.....	6 8.5	6 7.9	6 7.6	.....	.....	-.6	-.3	.....	.....	18....	.....	7 11.4	7 9.9	7 6.4	.....	.....	-1.5	-3.5	.....	.....
22....	.....	6 9.8	6 9.1	6 8.8	.....	.....	-.7	-.3	.....	.....	20....	.....	7 11.7	7 10.3	7 7.6	.....	.....	-1.4	-2.7	.....	.....
29....	.....	6 9.8	6 9.6	6 8.9	.....	.....	-.2	-.7	.....	.....	27....	.....	8 .4	7 10.3	7 8.4	.....	.....	-2.1	-1.9	.....	.....
May 6....	.....	6 11.0	6 11.1	6 9.8	.....	.....	+ .1	-1.3	.....	.....	May 4....	.....	7 11.5	7 8.8	7 7.5	.....	.....	-2.7	-1.3	.....	.....
13....	.....	6 11.6	6 11.3	6 9.4	.....	.....	-.3	-1.9	.....	.....	11....	.....	7 10.8	7 8.6	7 7.3	.....	.....	-2.2	-1.3	.....	.....
20....	.....	6 10.9	6 10.2	6 8.1	.....	.....	-.7	-2.1	.....	.....	18....	.....	7 9.8	7 7.6	7 6.0	.....	.....	-2.2	-1.6	.....	.....
27....	.....	6 11.4	6 10.3	6 8.8	.....	.....	-1.1	-2.0	.....	.....	25....	.....	7 10.4	7 7.4	7 5.6	.....	.....	-3.0	-1.8	.....	.....
June 3....	.....	.....	6 10.2	6 8.2	.....	.....	.....	-2.0	.....	.....	June 1....	.....	.....	7 7.5	7 5.8	7 5.4	.....	.....	-2.2	+ .1	.....
10....	.....	.....	6 10.1	6 8.8	.....	.....	.....	-1.8	.....	.....	8....	.....	.....	7 8.2	7 6.8	7 5.6	.....	.....	-2.4	-.2	.....
17....	.....	.....	6 9.5	6 7.9	.....	.....	.....	-1.6	.....	.....	15....	.....	.....	7 8.8	7 6.4	7 6.1	.....	.....	-2.4	-.3	.....
24....	.....	.....	6 9.8	6 8.4	6 9.1	.....	.....	-1.4	+ .7	.....	22....	.....	.....	7 9.0	7 6.2	7 5.4	.....	.....	-2.8	-.8	.....
July 1....	.....	.....	6 10.1	6 8.5	6 8.7	.....	.....	-1.6	+ .2	.....	29....	.....	.....	7 8.0	7 5.7	7 5.2	.....	.....	-2.8	-.6	.....
8....	.....	.....	6 11.8	6 10.0	6 10.1	.....	.....	-1.3	+ .1	.....	July 6....	.....	.....	7 7.4	7 4.7	7 4.0	.....	.....	-2.7	-.7	.....
15....	.....	.....	6 10.5	6 8.8	6 9.4	.....	.....	-1.7	+ .6	.....	13....	.....	.....	7 6.4	7 2.6	7 1.8	.....	.....	-3.8	-.8	.....
22....	.....	.....	6 10.8	6 8.9	6 9.8	.....	.....	-1.9	+ .9	.....	20....	.....	.....	7 7.0	7 2.4	7 1.1	.....	.....	-4.6	-1.8	.....
29....	.....	.....	7 .1	6 10.1	6 11.1	.....	.....	-2.0	+1.0	.....	27....	.....	.....	7 7.9	7 3.0	7 1.7	.....	.....	-4.9	-1.3	.....
Aug. 5....	.....	.....	.....	6 11.2	7 .2	.....	.....	.....	+1.0	.....	Aug. 8....	.....	.....	.....	7 4.0	7 2.9	.....	.....	.....	-1.1	.....
12....	.....	.....	.....	7 2.0	7 8.1	.....	.....	.....	+1.1	.....	10....	.....	.....	.....	7 4.3	7 3.0	.....	.....	.....	-1.3	.....
19....	7 3.2	.....	.....	7 1.2	7 2.6	.....	.....	.....	+1.4	+ .6	17....	.....	.....	.....	7 4.9	7 3.1	.....	.....	.....	-1.8	.....
26....	7 3.6	.....	.....	7 1.7	7 3.1	.....	.....	.....	+1.4	+ .5	24....	.....	.....	.....	7 5.8	7 3.8	.....	.....	.....	-2.0	.....
Sept. 2....	7 4.3	.....	.....	7 2.3	7 3.8	.....	.....	.....	+1.5	+ .5	31....	.....	.....	.....	7 7.9	7 5.2	.....	.....	.....	-2.7	.....
9....	7 6.4	.....	.....	7 4.2	7 5.8	.....	.....	.....	+1.6	+ .6	Sept. 7....	.....	.....	.....	7 7.4	7 4.3	.....	.....	.....	-3.1	.....
16....	7 5.9	.....	.....	7 8.4	7 5.0	.....	.....	.....	+1.6	+ .9	14....	.....	.....	.....	7 7.8	7 4.7	.....	.....	.....	-3.1	.....
23....	7 5.5	.....	.....	7 8.9	7 5.2	.....	.....	.....	+1.3	+ .8	21....	7 4.2	.....	.....	7 8.8	7 5.4	.....	.....	.....	-3.4	-1.2
30....	7 4.9	7 4.7	.....	7 3.8	7 5.1	-.2	.....	.....	+1.3	-.2	28....	7 3.6	.....	.....	7 8.1	7 4.7	.....	.....	.....	-3.4	-1.1
Oct. 7....	7 4.9	7 4.6	.....	7 4.2	7 5.4	-.3	.....	.....	+1.2	-.5	Oct. 5....	7 4.2	.....	.....	7 8.7	7 5.6	.....	.....	.....	-3.1	-1.4
14....	7 5.8	7 5.7	.....	7 5.3	7 5.9	-.1	.....	.....	+ .6	-.1	12....	7 6.1	.....	.....	7 10.4	7 7.8	.....	.....	.....	-2.6	-1.7
21....	7 6.2	7 6.0	.....	7 6.1	7 6.6	-.2	.....	.....	+ .5	-.4	19....	7 8.2	.....	.....	7 10.7	7 10.0	.....	.....	.....	-.7	-1.8
28....	7 5.0	7 4.7	7 5.2	7 5.2	7 5.8	-.3	+ .5	.....	+ .6	-.8	25....	7 8.9	.....	.....	7 10.6	7 10.0	.....	.....	.....	-.6	-1.2
Nov. 4....	7 3.3	7 2.9	7 3.5	.....	7 4.1	-.4	+ .6	.....	.....	-.8	Nov. 2....	7 7.3	.....	.....	.....	7 8.2	.....	.....	.....	.....	-.9
11....	7 2.1	7 1.4	7 2.2	.....	7 2.4	-.7	+ .8	.....	.....	-.3	9....	7 6.8	7 5.2	.....	.....	7 6.8	.....	.....	.....	.....	-.6
18....	7 1.4	7 .6	7 1.5	.....	7 1.6	-.8	+ .9	.....	.....	-.2	16....	7 4.8	7 3.3	.....	.....	7 4.8	.....	.....	.....	.....	-.0
25....	7 1.9	7 1.0	7 2.0	.....	7 2.8	-.9	+1.0	.....	.....	-.9	23....	7 3.6	7 2.3	.....	.....	7 3.6	.....	.....	.....	.....	-.0
Dec. 2....	7 2.0	7 .9	.....	.....	7 2.8	-1.1	.....	.....	.....	-.8	30....	7 3.4	7 2.3	.....	.....	7 3.4	.....	.....	.....	.....	-.0
9....	7 2.5	7 1.5	.....	.....	7 3.0	-1.0	.....	.....	.....	-.5	Dec. 7....	7 3.0	7 1.8	.....	.....	7 3.1	.....	.....	.....	.....	-.1
16....	7 3.4	7 2.4	7 3.1	.....	7 4.4	-1.0	+ .7	.....	.....	-1.0	14....	7 3.4	7 2.0	.....	.....	7 3.9	.....	.....	.....	.....	-.5
23....	7 4.0	7 2.6	7 3.1	.....	7 4.9	-1.4	+ .5	.....	.....	-.9	21....	7 3.8	7 2.2	7 2.2	.....	7 4.3	.....	.....	.....	.....	-.5
30....	7 4.3	7 2.8	7 3.2	.....	7 4.6	-1.5	+ .4	.....	.....	-.8	28....	7 4.1	7 2.3	7 2.3	.....	7 4.7	.....	.....	.....	.....	-.6

* Regular quotations not available.

TABLE III.—Concluded

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1918																					
Jan. 4	7 4.7	7 2.6	7 2.5	.....	.....	-2.1	- .1	.....	.....	.....	Jan. 3	7 1.1	7 .4	7 .8	.....	.....	.....	.....	.....	.....
11	7 5.3	7 3.0	7 2.6	.....	.....	-2.3	- .4	.....	.....	.....	10	7 1.7	7 .9	7 1.1	.....	.....	.....	.....	.....	.....
18	7 6.0	7 3.5	7 3.3	.....	.....	-2.5	- .2	.....	.....	.....	17	7 2.8	7 1.6	7 1.7	.....	.....	.....	.....	.....	.....
25	7 5.1	7 2.8	7 2.5	.....	.....	-2.3	- .3	.....	.....	.....	24	7 2.7	7 1.8	7 1.8	.....	.....	.....	.....	.....	.....
Feb. 1	7 5.0	7 2.8	7 2.6	.....	.....	-2.2	- .2	.....	.....	.....	31	7 2.4	7 2.1	7 2.3	.....	.....	.....	.....	.....	.....
8	7 5.4	7 3.3	7 3.1	.....	.....	-2.1	- .2	.....	.....	.....	Feb. 7	7 2.4	7 2.1	7 2.2	.....	.....	.....	.....	.....	.....
15	7 5.4	7 3.0	7 2.7	.....	.....	-2.4	- .3	.....	.....	.....	14	7 2.9	7 2.8	7 2.8	.....	.....	.....	.....	.....	.....
22	7 6.3	7 3.8	7 3.3	.....	.....	-2.5	- .5	.....	.....	.....	21	7 4.1	7 3.7	7 3.6	.....	.....	.....	.....	.....	.....
Mar. 1	7 6.5	7 3.8	7 3.2	.....	.....	-2.7	- .6	.....	.....	.....	28	7 4.4	7 4.3	7 4.1	.....	.....	.....	.....	.....	.....
8	7 6.4	7 3.4	7 2.5	.....	.....	-3.0	- .9	.....	.....	.....	Mar. 7	7 3.8	7 3.5	7 3.2	.....	.....	.....	.....	.....	.....
15	7 5.8	7 3.4	7 2.6	7 2.1	.....	-2.4	- .8	- .5	.....	.....	14	7 2.6	7 2.8	7 2.5	.....	.....	.....	.....	.....	.....
22	7 5.3	7 3.2	7 2.4	7 2.0	.....	-2.1	- .8	- .4	.....	.....	21	7 3.0	7 2.9	7 2.8	.....	.....	.....	.....	.....	.....
29	7 7.1	7 3.8	7 2.8	7 2.4	.....	-3.3	-1.0	- .4	.....	.....	28	7 3.0	7 3.0	7 2.8	.....	.....	.....	.....	.....	.....
Apr. 5	.....	7 5.0	7 3.6	7 3.2	.....	.....	-1.4	- .4	.....	.....	Apr. 4	.....	7 2.4	7 2.1	7 .7	.....	.....	.....	.....	.....
12	.....	7 6.0	7 4.4	7 3.4	.....	.....	-1.6	-1.0	.....	.....	11	.....	7 2.0	7 1.8	7 .4	.....	.....	.....	.....	.....
19	.....	7 6.1	7 4.2	7 3.1	.....	.....	-1.9	-1.1	.....	.....	18	.....	7 1.4	7 1.7	7 .5	.....	.....	.....	.....	.....
26	.....	7 8.7	7 6.4	7 4.7	.....	.....	-2.3	-1.7	.....	.....	25	.....	7 1.7	7 2.5	7 1.3	.....	.....	.....	.....	.....
May 3	.....	7 9.0	7 6.4	7 4.6	.....	.....	-2.6	-1.8	.....	.....	May 2	.....	7 1.3	7 2.6	7 .9	.....	.....	.....	.....	.....
10	.....	7 7.9	7 5.4	7 3.2	.....	.....	-2.5	-2.2	.....	.....	9	.....	7 2.3	7 3.3	7 .7	.....	.....	.....	.....	.....
17	.....	7 6.4	7 4.8	7 2.6	.....	.....	-1.6	-2.2	.....	.....	16	.....	.....	7 3.8	7 .9	.....	.....	.....	.....	.....
24	.....	7 6.2	7 5.1	7 3.2	.....	.....	-1.1	-1.9	.....	.....	23	.....	.....	7 4.3	7 1.6	.....	.....	.....	.....	.....
31	.....	7 6.1	7 5.9	7 4.1	.....	.....	- .2	-1.8	.....	.....	30	.....	.....	7 3.6	7 1.2	.....	.....	.....	.....	.....
June 7	.....	.....	7 5.4	7 3.6	7 3.9	.....	.....	-1.8	+ .3	.....	June 6	.....	.....	7 3.8	7 1.4	.....	.....	.....	.....	.....
14	.....	.....	7 5.4	7 3.8	7 4.0	.....	.....	-1.6	+ .2	.....	13	.....	.....	7 3.1	7 .3	7 1.0	.....	.....	.....	.....
21	.....	.....	7 6.1	7 4.1	7 4.6	.....	.....	-2.0	+ .5	.....	20	.....	.....	7 1.8	6 11.1	6 11.8	.....	.....	.....	.....
28	.....	.....	7 5.6	7 3.4	7 4.0	.....	.....	-2.2	+ .6	.....	27	.....	.....	6 10.7	6 9.8	6 10.0	.....	.....	.....	.....
July 5	.....	.....	7 5.4	7 3.4	7 4.1	.....	.....	-2.0	+ .7	.....	July 4	.....	.....	6 10.0	6 8.4	6 9.1	.....	.....	.....	.....
12	.....	.....	7 5.8	7 4.0	7 4.6	.....	.....	-1.8	+ .6	.....	11	.....	.....	.....	6 9.3	6 10.1	.....	.....	.....	.....
19	.....	.....	7 5.5	7 3.1	7 3.8	.....	.....	-2.4	+ .7	.....	18	.....	.....	.....	6 8.5	6 9.5	.....	.....	.....	.....
26	.....	.....	7 5.7	7 3.5	7 4.2	.....	.....	-2.2	+ .7	.....	25	.....	.....	.....	6 10.7	7 .1	.....	.....	.....	.....
Aug. 2	.....	.....	.....	7 2.4	7 2.6	.....	.....	.....	+ .2	.....	Aug. 1	.....	.....	.....	7 7.6	7 9.0	.....	.....	.....	.....
9	.....	.....	.....	7 1.6	7 1.7	.....	.....	.....	+ .1	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	7 1.5	7 1.6	.....	.....	.....	+ .1	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	.....	.....	.....	7 2.1	7 2.1	.....	.....	.....	.0	.....	22	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	7 1.6	.....	.....	7 1.6	7 1.2	.....	.....	.....	- .4	+ .4	29	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sept. 6	7 3.0	.....	.....	7 2.2	7 2.1	.....	.....	.....	- .1	+ .9	Sept. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	7 3.1	.....	.....	7 2.2	7 1.9	.....	.....	.....	- .8	+1.2	12	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	7 3.0	.....	.....	7 2.0	7 1.8	.....	.....	.....	- .2	+1.2	19	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	7 2.4	.....	.....	7 .9	7 1.1	.....	.....	.....	+ .2	+1.3	26	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oct. 4	7 2.4	7 2.0	.....	7 .5	7 1.0	- .4	.....	.....	+ .5	+1.4	Oct. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	7 1.6	7 1.2	.....	7 .2	7 .8	- .4	.....	.....	+ .6	+ .3	10	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	6 11.9	6 11.6	.....	6 10.0	6 10.8	- .8	.....	.....	+ .8	.....	17	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	6 11.3	6 11.1	.....	.....	6 9.8	- .2	.....	.....	.....	+1.6	24	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nov. 1	7 1.1	7 .7	.....	.....	6 11.9	- .4	.....	.....	.....	+1.2	31	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	7 .8	7 .3	.....	.....	6 11.0	- .5	.....	.....	.....	+1.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	7 1.8	7 1.6	.....	.....	7 .4	- .2	.....	.....	.....	+1.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	7 2.7	7 2.4	.....	.....	7 1.2	- .3	.....	.....	.....	+1.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	7 3.2	7 2.8	.....	.....	7 1.4	- .4	.....	.....	.....	+1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dec. 6	7 2.1	7 1.6	.....	.....	6 11.7	- .5	.....	.....	.....	+2.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	7 2.6	7 1.9	.....	.....	.....	- .7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	7 2.1	7 1.4	.....	.....	.....	- .7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	7 1.7	7 1.2	.....	.....	.....	- .6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE IV.—PRICES OF "GRADED WHEAT FUTURES" AND INTER-OPTION SPREADS AT LIVERPOOL, WEEKLY, 1921-1938*

Week ending	Prices					Spreads					Week ending	Prices					Spreads					
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Sept.	Dec.	Mar.-May	May-July	July-Sept.	Sept.-Dec.	Dec.-Mar.	
1921											1922											
Jan. 8											Jan. 7	10 1.2	9 9.8				-3.4					
15											14	10 .6	9 8.4				-4.2					
22											21	10 1.1	9 8.6				-4.5					
29											28	10 3.1	9 10.9				-4.2					
Feb. 5											Feb. 4	10 8.0	10 3.2				-4.8					
12											11	11 3.8	10 11.4				-4.4					
19											18	12 1.5	11 5.3				-8.2					
26											25	12 6.4	12 .7				-5.7					
Mar. 5											Mar. 4	12 8.6	12 3.3				-5.3					
12											11	12 3.4	11 10.2				-5.2					
19											18	11 5.7	11 5.2				- .5					
26											25	11 5.5	11 4.7	11 6.1			- .8	+1.4				
Apr. 2											Apr. 1		11 2.2	11 2.9				+ .7				
9											8		11 2.8	11 3.8				+1.0				
16											15		11 3.6	11 4.8				+1.2				
23				12 3.7							22		11 8.6	11 9.2				+ .6				
30				12 1.3							29		11 8.6	11 9.9	11 3.9			+1.3	-6.0			
May 7				12 5.7							May 6		11 7.7	11 9.3	11 3.6			+1.6	-5.7			
14				12 4.6							13		11 6.7	11 7.7	11 2.6			+1.0	-5.1			
21				12 4.0							20		11 9.2	11 9.2	11 3.0			.0	-6.2			
28				12 11.3							27		11 6.1	11 6.1	11 1.0			.0	-5.1			
June 4				14 2.0							June 3			11 1.1	10 9.6				-3.5			
11				14 2.3	14 2.3				.0		10			10 7.4	10 4.7				-2.7			
18				14 .7	14 .7				.0		17			10 5.2	10 2.6				-2.6			
25				13 11.4	13 11.1				- .3		24			10 6.6	10 4.4				-2.2			
July 2				13 9.5	13 3.6				- .9		July 1			10 8.8	10 6.0				-2.8			
9				13 6.8	13 5.8				-1.0		8			10 10.6	10 6.1				-4.5			
16				14 8.2	14 2.2				-1.0		15			10 8.4	10 4.0				-4.4			
23				14 7.9	14 6.9				-1.0		22			11 .3	10 4.8				-7.5			
30				14 5.7						29			11 .5	10 4.7	10 3.4				-7.3	-1.3		
Aug. 6				14 2.8						Aug. 5				10 2.5	9 11.8				-2.7			
*13				14 2.0						12				10 .7	9 8.6				-4.2			
20				14 .4						19				9 5.5	9 3.9				-1.6			
27				13 8.1	13 9.5				+1.4		26			9 1.5	9 .5				-1.0			
Sept. 8				13 9.8	13 10.8				+1.0		Sept. 2			9 3.6	9 .7				-2.9			
10				14 1.6	14 2.3				+1.2		9			9 4.0	9 1.5				-2.5			
17				13 11.9	14 1.5				+1.6		16			9 5.7	9 .1				-5.6			
24				13 5.5	13 6.5				+1.0		23			9 10.8	9 3.6				-7.2			
Oct. 1				12 11.1	13 .9				+1.8		30			9 4.8								
8	12 .0			11 10.8	11 11.8				+1.0	+ .2	Oct. 7	9 4.0	9 2.2		9 6.2				-2.2			
15	11 4.8				11 4.3					+ .5	14	9 6.2	9 3.6		9 3.2	-2.6			-2.0			
22	10 4.9				10 5.6					- .7	21	9 8.1	9 5.0		10 .8	-3.1			-4.7			
29	10 4.0				10 4.6					- .6	28	9 8.5	9 5.9		10 .6	-2.6			-4.1			
Nov. 5	10 .8	9 11.4			10 .9	- .9				- .6	Nov. 4	9 9.2	9 8.5		10 4.1	- .7			-6.9			
12	10 .5				10 3.9					-3.4	11	9 8.8	9 6.2		10 2.4	-2.6			-5.6			
19	9 10.1				10 2.8					-4.2	18	9 10.7	9 7.6		10 5.3	-3.1			-7.1			
26	10 .7				10 3.2					-2.5	25	9 8.1	9 6.8		10 6.9	-1.8			-10.8			
Dec. 3	10 4.1				10 7.7					-3.6	Dec. 2	9 9.9	9 6.3		10 5.5	-3.6			-7.6			
10	10 3.4				10 7.0					-3.6	9	9 9.5	9 6.1		10 4.9	-3.4			-7.3			
17	10 .4										16	9 10.8	9 7.4		10 4.6	-3.4			-5.8			
24	10 1.8	10 .6				-1.2					23	10 .5	9 9.5		10 7.6	-3.0			-7.1			
31	10 1.2	9 10.9				-2.3					30	10 1.8	9 10.6		10 9.1	-3.2			-7.3			

* Weekly averages of daily closing prices in shillings and pence per 100 lbs.; April 1921-March 1922 from *Corn Trade News*; April 1922-July 1922, from *Daily Trade Bulletin*; August 1922-July 1924, from *Russell's Market News*; August 1924-December 1930, from records of Chicago Board of Trade and of U.S. Grain Futures Administration, of quotations reported by Broomhall's New York office; from January 1931, from *London Grain, Seed and Oil Reporter*.

TABLE IV.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1923																					
Jan. 6.....	9 10.1	9 7.4	.....	.....	.....	-2.7	.....	.....	.....	.....	Jan. 5.....	8 10.6	8 8.5	.....	.....	.....	.....	.....	.....	.....	.....
18.....	9 9.6	9 7.3	.....	.....	.....	-2.3	.....	.....	.....	.....	12.....	9 1.7	8 10.9	8 10.3	.....	.....	.....	.....	.....	.....	.....
20.....	9 9.3	9 7.2	.....	.....	.....	-2.1	.....	.....	.....	.....	19.....	9 3.1	8 11.8	8 10.5	.....	.....	.....	.....	.....	.....	.....
27.....	9 8.1	9 6.1	.....	.....	.....	-2.0	.....	.....	.....	.....	26.....	9 2.8	8 10.8	8 9.8	.....	.....	.....	.....	.....	.....	.....
Feb. 3.....	9 7.3	9 6.1	.....	.....	.....	-1.2	.....	.....	.....	.....	Feb. 2.....	9 4.5	8 11.3	8 10.2	.....	.....	.....	.....	.....	.....	.....
10.....	9 7.6	9 7.2	.....	.....	.....	-1.4	.....	.....	.....	.....	9.....	9 6.0	9 .2	8 10.9	.....	.....	.....	.....	.....	.....	.....
17.....	9 9.3	9 8.8	.....	.....	.....	-1.5	.....	.....	.....	.....	16.....	9 5.2	8 11.7	8 11.4	.....	.....	.....	.....	.....	.....	.....
24.....	9 8.5	9 7.2	.....	.....	.....	-1.3	.....	.....	.....	.....	23.....	9 6.2	9 .2	8 11.6	.....	.....	.....	.....	.....	.....	.....
Mar. 3.....	9 7.7	9 6.2	.....	.....	.....	-1.5	.....	.....	.....	.....	Mar. 1.....	9 5.1	9 .4	9 .0	8 10.4	.....	.....	.....	.....	.....	.....
10.....	9 7.3	9 5.9	.....	.....	.....	-1.4	.....	.....	.....	.....	8.....	9 5.3	9 .9	9 .4	8 11.3	.....	.....	.....	.....	.....	.....
17.....	9 8.5	9 7.1	9 6.8	.....	.....	-1.4	- .3	.....	.....	.....	15.....	9 4.2	8 11.8	8 10.9	8 10.0	.....	.....	.....	.....	.....	.....
24.....	9 11.3	9 9.0	9 8.6	.....	.....	-2.3	- .4	.....	.....	.....	22.....	9 4.5	8 11.8	8 10.7	8 9.8	.....	.....	.....	.....	.....	.....
31.....	10 .4	9 8.7	9 7.7	.....	.....	-3.7	-1.0	.....	.....	.....	29.....	9 .7	8 10.6	8 9.9	8 9.2	.....	.....	.....	.....	.....	.....
Apr. 7.....	.....	9 10.5	9 6.5	.....	.....	-4.0	.....	.....	.....	.....	Apr. 5.....	.....	8 10.1	8 10.4	8 10.1	.....	.....	.....	.....	.....	.....
14.....	.....	10 .7	9 11.4	.....	.....	-1.3	.....	.....	.....	.....	12.....	.....	8 10.3	8 10.5	8 10.3	.....	.....	.....	.....	.....	.....
21.....	.....	10 2.4	10 .5	9 11.3	.....	.....	-1.9	- 1.2	.....	.....	19.....	.....	8 11.0	8 11.4	8 11.4	.....	.....	.....	.....	.....	.....
28.....	.....	10 4.6	10 1.5	9 11.3	.....	.....	-3.1	- 2.2	.....	.....	26.....	.....	8 10.7	8 10.8	8 10.8	.....	.....	.....	.....	.....	.....
May 5.....	.....	10 7.3	10 .2	9 9.7	.....	.....	-7.1	- 2.5	.....	.....	May 3.....	.....	9 .1	8 11.9	9 .1	.....	.....	.....	.....	.....	.....
12.....	.....	10 4.3	9 10.2	9 7.5	.....	.....	-6.1	- 2.7	.....	.....	10.....	.....	9 1.4	9 .6	8 11.7	.....	.....	.....	.....	.....	.....
19.....	.....	10 4.0	9 10.6	9 7.9	.....	.....	-6.4	- 2.7	.....	.....	17.....	.....	9 .2	8 11.7	8 11.2	.....	.....	.....	.....	.....	.....
26.....	.....	.....	9 10.9	9 8.6	.....	.....	.....	- 2.3	.....	.....	24.....	.....	9 2.0	9 1.5	9 .6	.....	.....	.....	.....	.....	.....
June 2.....	.....	.....	9 8.4	9 6.6	.....	.....	.....	- 1.8	.....	.....	31.....	.....	9 3.2	9 2.4	9 1.2	.....	.....	.....	.....	.....	.....
9.....	.....	.....	9 7.0	9 4.8	.....	.....	.....	- 2.2	.....	.....	June 7.....	.....	.....	9 1.6	9 .6	.....	.....	.....	.....	.....	.....
16.....	.....	.....	9 8.5	9 5.6	.....	.....	.....	- 2.9	.....	.....	14.....	.....	.....	9 5.6	9 4.5	.....	.....	.....	.....	.....	.....
23.....	.....	.....	9 7.1	9 3.8	.....	.....	.....	- 3.3	.....	.....	21.....	.....	.....	9 9.5	9 7.9	9 7.2	.....	.....	.....	.....	.....
30.....	.....	.....	9 5.4	9 2.1	.....	.....	.....	- 3.3	.....	.....	28.....	.....	.....	9 8.8	9 8.4	9 7.5	.....	.....	.....	.....	.....
July 7.....	.....	.....	9 6.1	9 1.9	9 1.5	.....	.....	- 4.2	- .4	.....	July 5.....	.....	.....	10 1.4	10 .2	9 11.3	.....	.....	.....	.....	.....
14.....	.....	.....	9 6.8	9 .4	9 .0	.....	.....	- 6.4	- .4	.....	12.....	.....	.....	10 .2	9 11.3	.....	.....	.....	.....	.....	.....
21.....	.....	.....	9 7.6	8 9.2	8 8.7	.....	.....	-10.4	- .5	.....	19.....	.....	.....	10 10.3	10 9.1	.....	.....	.....	.....	.....	.....
28.....	.....	.....	9 9.0	8 7.0	8 6.4	.....	.....	-14.6	- .6	.....	26.....	.....	.....	11 .8	10 11.7	.....	.....	.....	.....	.....	.....
Aug. 4.....	.....	.....	.....	8 6.0	8 5.5	.....	.....	.....	- .5	.....	Aug. 2.....	.....	.....	11 6.0	11 5.2	.....	.....	.....	.....	.....	.....
11.....	.....	.....	.....	8 5.2	8 4.8	.....	.....	.....	- .4	.....	9.....	.....	.....	11 1.3	11 1.1	.....	.....	.....	.....	.....	.....
18.....	.....	.....	.....	8 5.9	8 5.9	.....	.....	.....	.0	.....	16.....	.....	.....	10 11.4	10 11.2	.....	.....	.....	.....	.....	.....
25.....	.....	.....	.....	8 7.4	8 7.1	.....	.....	.....	- .3	.....	23.....	11 .2	.....	11 .8	11 .6	.....	.....	.....	.....	.....	.....
Sept. 1.....	.....	.....	.....	8 8.0	8 7.2	.....	.....	.....	- .8	.....	30.....	10 9.9	.....	10 9.0	10 9.1	.....	.....	.....	.....	.....	.....
8.....	.....	.....	.....	8 9.6	8 7.6	.....	.....	.....	- 2.0	.....	Sept. 6.....	11 .8	.....	10 11.4	10 11.8	.....	.....	.....	.....	.....	.....
15.....	.....	.....	.....	8 9.1	8 6.7	.....	.....	.....	- 2.4	.....	13.....	11 2.0	.....	11 2.2	11 1.5	.....	.....	.....	.....	.....	.....
22.....	8 5.9	.....	.....	8 8.6	8 6.3	.....	.....	.....	- 2.3	- .4	20.....	11 4.4	.....	11 6.1	11 4.6	.....	.....	.....	.....	.....	.....
29.....	8 7.0	.....	.....	8 8.7	8 7.3	.....	.....	.....	- 1.4	- .3	27.....	11 8.1	.....	11 9.7	11 8.4	.....	.....	.....	.....	.....	.....
Oct. 6.....	8 7.8	.....	.....	8 9.2	8 8.4	.....	.....	.....	- .8	- .6	Oct. 4.....	12 4.5	.....	12 7.0	12 4.8	.....	.....	.....	.....	.....	.....
13.....	8 8.2	.....	.....	8 11.0	8 9.5	.....	.....	.....	- 1.5	- 1.3	11.....	12 8.8	.....	.....	12 11.5	.....	.....	.....	.....	.....	.....
20.....	8 7.8	.....	.....	8 9.9	8 8.6	.....	.....	.....	- 1.3	- 1.3	18.....	12 8.3	.....	.....	12 9.1	.....	.....	.....	.....	.....	.....
27.....	8 7.0	.....	.....	8 9.5	8 8.2	.....	.....	.....	- 1.3	- 1.2	25.....	12 5.3	.....	.....	12 5.4	.....	.....	.....	.....	.....	.....
Nov. 3.....	8 7.7	.....	.....	8 9.5	8 9.5	.....	.....	.....	- 1.8	- 1.8	Nov. 1.....	12 4.1	.....	.....	12 3.5	.....	.....	.....	.....	.....	.....
10.....	8 7.9	.....	.....	8 10.2	8 10.2	.....	.....	.....	- 2.3	- 2.3	8.....	12 5.4	.....	.....	12 6.4	.....	.....	.....	.....	.....	.....
17.....	8 8.3	8 7.0	.....	8 10.8	8 10.8	-1.3	.....	.....	- 2.5	- 2.5	15.....	13 4	12 11.3	.....	12 10.7	.....	.....	.....	.....	.....	.....
24.....	8 8.8	8 6.9	.....	8 11.9	8 11.9	-1.9	.....	.....	- 3.1	- 3.1	22.....	12 10.8	12 10.3	.....	12 7.8	.....	.....	.....	.....	.....	.....
Dec. 1.....	8 7.8	8 5.8	.....	8 10.7	8 10.7	-2.0	.....	.....	- 2.9	- 2.9	29.....	12 10.9	12 10.2	.....	12 8.0	.....	.....	.....	.....	.....	.....
8.....	8 8.4	8 6.9	.....	8 11.3	8 11.3	-1.5	.....	.....	- 2.9	- 2.9	Dec. 6.....	12 8.0	12 7.3	.....	12 5.4	.....	.....	.....	.....	.....	.....
15.....	8 7.9	8 6.6	.....	8 11.2	8 11.2	-1.3	.....	.....	- 3.3	- 3.3	13.....	12 11.3	12 10.8	.....	12 10.0	.....	.....	.....	.....	.....	.....
22.....	8 8.2	8 6.9	.....	8 11.9	8 11.9	-1.3	.....	.....	- 3.7	- 3.7	20.....	13 3.8	13 2.8	.....	13 2.4	.....	.....	.....	.....	.....	.....
29.....	8 8.6	8 7.0	.....	9 .9	9 .9	-1.6	.....	.....	- 4.3	- 4.3	27.....	18 7.3	13 5.8	.....	.....	.....	.....	.....	.....	.....	.....

TABLE IV.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.		Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.
1927																					
Jan. 1	10 4.9	10 2.6	.....	.....	.....	-2.3	.....	.....	.....	.....	Jan. 7	10 4.2	10 3.3	10 8.2	.....	.....	.....	.....	.....	.....
8	10 4.1	10 1.1	10 1.4	.....	.....	-3.0	- 7	.....	.....	.....	14	10 3.5	10 2.6	10 2.6	.....	.....	.....	.....	.....	.....
15	10 4.1	10 1.1	10 1.4	.....	.....	-3.0	+ 3	.....	.....	.....	21	10 3.4	10 2.8	10 3.0	.....	.....	.....	.....	.....	.....
22	10 5.0	10 2.1	10 2.4	.....	.....	-2.9	+ 3	.....	.....	.....	28	10 1.9	10 1.9	10 2.8	.....	.....	.....	.....	.....	.....
29	10 6.8	10 3.2	10 3.8	.....	.....	-3.6	+ 6	.....	.....	.....	Feb. 4	10 .0	10 .6	10 1.4	.....	.....	.....	.....	.....	.....
Feb. 5	10 7.1	10 2.7	10 4.0	.....	.....	-3.4	+ 3	.....	.....	.....	11	9 10.2	9 11.3	10 .3	.....	.....	.....	.....	.....	.....
12	10 4.8	10 2.2	10 2.7	.....	.....	-2.6	+ 5	.....	.....	.....	18	9 11.8	10 1.0	10 1.6	.....	.....	.....	.....	.....	.....
19	10 5.7	10 3.0	10 3.6	.....	.....	-2.7	+ 6	.....	.....	.....	25	10 1.4	10 2.7	10 3.7	.....	.....	.....	.....	.....	.....
26	10 6.3	10 3.0	10 3.4	.....	.....	-3.3	+ 4	.....	.....	.....	Mar. 3	10 .4	10 2.8	10 4.3	.....	.....	.....	.....	.....	.....
Mar. 5	10 7.7	10 4.2	10 4.1	.....	.....	-3.5	-1.1	.....	.....	.....	10	10 1.8	10 4.2	10 5.8	.....	.....	.....	.....	.....	.....
12	10 7.4	10 4.4	10 4.1	.....	.....	-3.0	- 3	.....	.....	.....	17	10 2.1	10 4.2	10 5.8	.....	.....	.....	.....	.....	.....
19	10 6.9	10 3.0	10 2.6	10 .0	.....	-3.9	- 4	-2.6	.....	.....	24	10 3.7	10 5.5	10 6.8	.....	.....	.....	.....	.....	.....
26	10 6.7	10 1.6	10 1.0	9 10.8	.....	-5.1	- 6	-2.2	.....	.....	31	10 3.2	10 5.2	10 6.8	.....	.....	.....	.....	.....	.....
Apr. 2	.....	10 3.0	10 1.8	9 11.2	.....	.....	-1.2	-2.6	.....	.....	Apr. 7	.....	10 6.1	10 8.1	10 7.4	.....	.....	.....	.....	.....
9	.....	10 3.8	10 2.4	9 11.2	.....	.....	-1.4	-3.2	.....	.....	14	.....	10 8.4	10 11.1	10 11.2	.....	.....	.....	.....	.....
16	.....	10 3.7	10 2.5	9 11.1	.....	.....	-1.2	-3.4	.....	.....	21	.....	10 10.4	11 1.6	11 2.4	.....	.....	.....	.....	.....
23	.....	10 5.7	10 3.8	10 .3	.....	.....	-1.9	-3.5	.....	.....	28	.....	10 10.6	11 2.3	11 4.4	.....	.....	.....	.....	.....
30	.....	10 7.5	10 5.4	10 2.2	.....	.....	-2.1	-3.2	.....	.....	May 5	.....	10 11.8	11 3.1	11 5.5	.....	.....	.....	.....	.....
May 7	.....	10 11.5	10 8.8	10 5.0	.....	.....	-2.7	-3.8	.....	.....	12	.....	10 10.5	11 2.2	11 4.0	.....	.....	.....	.....	.....
14	.....	10 11.2	10 9.0	10 5.4	.....	.....	-2.2	-3.6	.....	.....	19	.....	10 6.7	10 9.8	11 .7	.....	.....	.....	.....	.....
21	.....	10 10.3	10 9.5	10 6.4	.....	.....	- 3	-3.1	.....	.....	26	.....	10 8.0	10 10.8	11 1.4	.....	.....	.....	.....	.....
28	.....	11 3.9	11 3.0	11 .2	10 10.8	.....	- 9	-2.8	-1.4	.....	June 2	.....	.....	10 8.5	10 11.3	.....	.....	.....	.....	.....
June 4	.....	.....	11 5.4	11 3.1	11 1.6	.....	.....	-2.3	-1.5	.....	9	.....	10 6.3	10 10.3	10 10.4	.....	.....	.....	.....	.....
11	.....	.....	11 4.8	11 2.2	11 1.0	.....	.....	-2.6	-1.2	.....	16	.....	10 8.0	10 7.8	10 8.3	.....	.....	.....	.....	.....
18	.....	.....	11 3.0	11 1.1	10 11.9	.....	.....	-1.9	-1.2	.....	23	.....	10 .2	10 5.9	10 7.2	.....	.....	.....	.....	.....
25	.....	.....	11 1.3	10 11.9	10 10.4	.....	.....	-1.4	-1.5	.....	30	.....	9 11.9	10 5.5	10 7.0	.....	.....	.....	.....	.....
July 2	.....	.....	11 .4	11 .0	10 10.9	.....	.....	- 4	-1.1	.....	July 7	.....	.....	10 3.0	10 7.3	10 8.0	.....	.....	.....	.....
9	10 11.2	.....	11 2.6	11 1.5	11 .5	.....	.....	-1.1	-1.0	-1.3	14	.....	.....	9 11.6	10 4.0	10 4.6	.....	.....	.....	.....
16	10 11.1	10 9.9	11 1.4	11 .9	11 .1	-1.2	.....	- 5	- 8	-1.0	21	.....	.....	9 8.1	10 .8	10 1.8	.....	.....	.....	.....
23	10 10.7	10 9.4	11 .3	10 11.8	10 11.4	-1.3	.....	- 5	- 4	- 7	28	.....	.....	9 2.6	.....	.....	.....	.....	.....	.....
30	10 11.0	10 9.6	10 11.8	10 11.8	10 11.6	-1.4	.....	.0	- 2	- 6	Aug. 4	9 9.0	.....	.....	9 5.5	9 7.5	.....	.....	.....	.....
Aug. 6	10 10.4	10 9.3	.....	10 11.1	10 11.0	-1.1	.....	.....	- 1	- 6	11	9 4.0	.....	.....	9 .4	9 2.2	.....	.....	.....	.....
13	11 1.8	11 .4	.....	10 2.7	11 2.5	-1.4	.....	.....	- 2	- 7	18	9 2.3	.....	.....	8 11.6	9 .8	.....	.....	.....	.....
20	11 2.0	11 .4	.....	11 3.1	11 3.5	-1.6	.....	.....	+ 4	-1.5	25	9 1.4	.....	.....	8 11.0	9 .0	.....	.....	.....	.....
27	11 .8	10 10.8	.....	11 1.5	11 2.3	-2.0	.....	.....	+ 8	-1.5	Sept. 1	9 2.4	.....	.....	9 .2	9 1.1	.....	.....	.....	.....
Sept. 3	10 9.8	10 7.8	.....	10 10.3	10 10.8	-2.0	.....	.....	+ 5	-1.0	8	9 2.0	.....	.....	8 11.3	9 1.1	.....	.....	.....	.....
10	10 9.0	10 6.9	.....	10 7.9	10 9.2	-2.1	.....	.....	+1.3	- 2	15	9 .4	.....	.....	8 8.9	8 10.4	.....	.....	.....	.....
17	10 5.5	10 4.1	.....	10 4.4	10 5.2	-1.4	.....	.....	+ 8	+ 3	22	9 1.9	.....	.....	8 9.2	8 11.8	.....	.....	.....	.....
24	10 4.7	10 3.3	.....	10 3.8	10 4.5	-1.4	.....	.....	+ 7	+ 2	29	9 4.5	.....	.....	9 .2	9 2.4	.....	.....	.....	.....
Oct. 1	10 4.7	10 3.3	.....	10 3.5	10 5.2	-1.4	.....	.....	+1.7	- 5	Oct. 6	9 5.1	9 5.8	.....	9 2.8	9 4.0	+ 7	.....	.....	.....
8	10 5.1	10 4.0	.....	10 3.0	10 5.1	-1.1	.....	.....	+2.1	.0	13	9 4.9	9 5.2	.....	9 4.5	9 4.8	+ 3	.....	.....	.....
15	10 5.6	10 4.4	.....	10 3.6	10 5.6	-1.2	.....	.....	+2.0	.0	20	9 3.5	9 3.7	.....	9 4.5	9 3.8	+ 2	.....	.....	.....
22	10 4.2	10 2.9	.....	10 2.2	10 4.2	-1.3	.....	.....	+2.0	.0	27	9 2.7	9 2.7	.....	.....	9 2.9	0	.....	.....	.....
29	10 1.8	10 .8	.....	10 .1	10 1.8	-1.0	.....	.....	+1.7	.0	Nov. 3	9 4.8	9 4.9	.....	.....	9 5.0	+ 1	.....	.....	.....
Nov. 5	10 2.1	10 1.2	.....	.....	10 1.7	- 9	.....	.....	.....	+ 4	10	9 3.7	9 3.9	.....	.....	9 3.6	+ 2	.....	.....	.....
12	10 3.0	10 1.8	.....	.....	10 2.3	-1.2	.....	.....	.....	+ 7	17	9 3.9	9 4.2	.....	.....	9 3.3	+ 3	.....	.....	.....
19	10 4.2	10 2.9	.....	.....	10 4.4	-1.3	.....	.....	.....	- 2	24	9 4.3	9 4.7	.....	.....	9 3.5	+ 4	.....	.....	.....
26	10 4.9	10 3.7	.....	.....	10 5.5	-1.2	.....	.....	.....	- 6	Dec. 1	9 3.0	9 3.8	.....	.....	9 2.2	+ 3	.....	.....	.....
Dec. 3	10 4.1	10 3.2	.....	.....	10 4.5	- 9	.....	.....	.....	- 4	8	9 1.7	9 2.4	9 3.4	.....	9 .5	+ 7	+1.0	.....	.....
10	10 4.0	10 3.3	.....	.....	10 4.5	- 7	.....	.....	.....	- 5	15	9 1.9	9 2.5	9 3.8	.....	9 .4	+ 6	+1.3	.....	.....
17	10 3.0	10 2.4	.....	.....	10 3.6	- 6	.....	.....	.....	- 6	22	9 1.9	9 2.9	9 4.3	.....	8 11.7	+1.0	+1.4	.....	.....
24	10 2.8	10 2.1	.....	.....	10 4.3	- 7	.....	.....	.....	-1.5	29	9 1.6	9 2.5	9 4.1	.....	8 11.4	+ 9	+1.6	.....	.....
31	10 3.4	10 2.6	.....	.....	10 6.8	- 8	.....	.....	.....	-2.9										

TABLE IV.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1929																					
Jan. 5	8 11.8	9 .7	9 2.6			+ .9	+1.9				Jan. 4	9 10.4	10 .3	10 .4							
12	9 .4	9 1.6	9 8.4			+1.2	+1.8				11	9 6.7	9 8.8	9 9.2							
19	9 2.5	9 8.4	9 5.4			+ .9	+2.0				18	9 1.4	9 4.8	9 6.3							
26	9 3.6	9 4.5	9 6.6			+ .9	+2.1				25	9 1.4	9 4.6	9 6.0							
Feb. 2	9 2.4	9 3.9	9 6.4			+1.5	+2.5				Feb. 1	8 8.4	9 .2	9 1.8							
9	9 2.1	9 4.0	9 6.4			+1.9	+2.4				8	8 4.3	8 8.2	8 10.1							
16	9 3.1	9 5.4	9 8.0			+2.3	+2.6				15	8 4.8	8 8.7	8 10.7							
23	9 2.3	9 5.1	9 8.0			+2.8	+2.9				22	7 10.2	8 2.4	8 5.1							
Mar. 2	9 .5	9 8.8	9 6.8			+3.3	+3.0				Mar. 1	7 8.7	8 .8	8 3.8							
9	8 11.8	9 2.9	9 5.6			+3.1	+2.7				8	7 7.2	7 10.8	8 .8							
16	8 11.4	9 2.7	9 5.6			+3.3	+2.9				15	7 1.0	7 3.1	7 5.4							
23	8 11.2	9 1.4	9 4.4	9 7.4		+2.2	+3.0	+3.0			22	7 3.1	7 6.3	7 8.0							
30	8 9.9	9 .0	9 2.9	9 5.4		+2.1	+2.9	+2.5			29	7 5.9	7 7.6	7 8.7	7 11.2						
Apr. 6		8 10.4	9 1.7	9 4.2			+3.3	+2.5			Apr. 5		7 10.4	8 .3	8 2.0						
13		8 10.6	9 2.2	9 5.2			+3.6	+3.0			12		8 2.4	8 4.2	8 7.0						
20		8 8.8	9 .9	9 4.3			+4.1	+3.4			19		7 9.0	7 10.7	8 .8						
27		8 4.6	8 9.3	9 1.6			+4.7	+4.3			26		7 7.4	7 9.5	8 .3						
May 4		8 8.3	8 7.5	8 11.7			+4.2	+4.2			May 3		7 6.8	7 8.9	7 11.6						
11		7 9.7	8 .9	8 4.7			+3.2	+3.8			10		7 6.0	7 7.8	7 9.8						
18		7 10.3	8 1.4	8 5.2			+3.1	+3.8			17		7 9.4	7 10.1	7 11.9						
25		7 9.7	8 .0	8 3.6	8 5.6		+2.3	+3.6	+2.0		24		7 10.5	7 11.1	7 11.9	8 1.0					
June 1			7 9.3	8 .3	8 1.9			+3.0	+1.6		31		8 .0	8 .4	8 1.2	8 2.8					
8			7 10.8	8 1.9	8 3.9			+3.1	+2.0		June 7			8 .4	8 1.0	8 3.0					
15			7 11.0	8 2.0	8 4.1			+3.0	+2.1		14			7 11.0	7 11.8	8 1.3					
22			7 11.0	8 3.0	8 5.5			+4.0	+2.5		21			7 5.0	7 6.1	7 7.1					
29			8 2.4	8 7.3	8 10.4			+4.9	+3.1		28			7 .3	7 2.2	7 3.8					
July 6			8 10.6	9 3.2	9 6.2			+4.6	+3.0		July 5			7 .0	7 2.2	7 4.0					
13			9 .3	9 4.4	9 7.4			+4.1	+3.0		12			6 11.4	7 2.0	7 3.8					
20			10 1.0	10 4.9	10 7.8			+3.9	+2.9		19			7 1.8	7 3.3	7 4.8					
27	10 11.8		10 1.8	10 5.9	10 8.8			+4.1	+2.9	+3.0	25	7 7.2		7 2.2	7 4.0	7 5.4					
Aug. 3	11 1.8			10 6.6	10 10.0				+3.4	+3.8	Aug. 2	7 4.8			7 2.0	7 3.4					
10	10 6.1			9 11.2	10 2.8				+3.6	+3.8	9	7 9.5			7 7.3	7 8.5					
17	10 5.8			9 10.9	10 2.4				+3.5	+3.4	16	7 6.4			7 4.6	7 5.4					
24	10 6.1			9 10.8	10 2.5				+3.7	+3.6	23	7 3.4			7 1.8	7 2.6					
31	10 4.0			9 7.4	9 11.8				+4.4	+4.2	30	7 2.0			7 .2	7 1.0					
Sept. 7	10 6.7			9 9.2	10 1.6				+4.4	+5.1	Sept. 6	6 11.8			6 10.1	6 10.6					
14	10 5.7	10 8.4		9 8.1	10 .7	+2.7			+4.6	+5.0	13	6 9.0			6 8.9	6 8.4					
21	10 8.6	10 7.1		9 4.9	9 9.9	+3.5			+4.9	+5.8	20	6 7.0			6 6.3	6 6.2					
28	9 11.3	10 3.0		8 11.6	9 5.0	+3.7			+5.4	+6.3	27	6 3.8	6 4.8		6 2.2	6 2.3	+1.0				
Oct. 5	9 11.4	10 3.1		8 11.6	9 5.0	+3.7			+5.4	+6.4	Oct. 4	6 .4	6 1.9		5 10.7	5 11.0	+1.5				
12	10 2.0	10 5.0		9 3.3	9 8.0	+3.0			+4.7	+6.0	11	5 10.9	6 .5		5 11.4	5 10.8	+1.6				
19	10 .4	10 3.7		9 1.6	9 5.8	+3.3			+4.2	+6.6	18	5 7.2	5 9.1		5 6.9	5 6.7	+1.9				
26	9 6.4	9 9.8		8 7.8	8 11.4	+2.9			+3.6	+7.0	25	5 8.5	5 10.0		5 9.4	5 8.4	+1.5				
Nov. 2	9 8.5	9 11.7			9 1.5	+3.2			+7.0		Nov. 1	5 9.1	5 10.3			5 9.1	+1.2				
9	9 4.6	9 7.7			8 8.9	+3.1			+7.7		8	5 7.8	5 8.2			5 7.4	+ .9				
16	8 11.5	9 2.8			8 3.8	+3.3			+7.7		15	5 4.0	5 4.9			5 3.8	+ .9				
23	9 5.9	9 8.8			8 10.1	+2.9			+7.8		22	5 .4	5 1.5			4 10.8	+1.1				
30	9 7.4	9 10.6			8 11.1	+3.2			+8.3		29	5 3.6	5 4.4			4 11.6	+1.8				
Dec. 7	9 11.4	10 2.4	10 3.4		9 3.7	+3.0	+1.0		+7.7		Dec. 6	5 1.2	5 3.1			4 10.5	+1.9				
14	9 6.5	9 8.6	9 8.6		9 .2	+2.1	.0		+6.3		13	4 11.5	5 1.2	5 2.7		4 9.8	+1.7	+1.5			
21	9 4.8	9 6.6	9 6.6		8 10.7	+1.8	.0		+6.1		20	4 7.8	4 9.4	4 10.7		4 5.8	+1.6	+1.3			
28	9 8.6	9 10.4	9 10.6		9 3.2	+1.8	+ .2		+5.4		27	4 3.5	4 4.6	4 5.7		4 2.0	+1.1	+1.1			

TABLE IV.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads										
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.						
1981											1982																
Jan. 3	4 2.2	4 3.0	4 4.2	.....	.....	+ .8	+1.2	.....	.....	.....	Jan. 2	5 5.0	5 7.5	5 8.9	.....	+2.5	+1.4	.....	.....	.....				
10	4 3.8	4 4.2	4 5.7	.....	.....	+ .4	+1.5	.....	.....	.....	9	5 6.0	5 8.1	5 9.6	.....	+2.1	+1.5	.....	.....	.....				
17	4 3.4	4 3.8	4 5.4	.....	.....	+ .4	+1.6	.....	.....	.....	16	5 2.7	5 5.1	5 6.9	.....	+2.4	+1.8	.....	.....	.....				
24	4 1.8	4 2.4	4 4.2	.....	.....	+ .6	+1.8	.....	.....	.....	23	5 1.8	5 4.5	5 6.8	.....	+2.7	+2.3	.....	.....	.....				
31	4 1.5	4 2.4	4 3.9	.....	.....	+ .9	+1.5	.....	.....	.....	30	5 .1	5 3.0	5 5.2	.....	+2.9	+2.2	.....	.....	.....				
Feb. 7	4 2.8	4 3.3	4 4.8	.....	.....	+ .5	+1.5	.....	.....	.....	Feb. 6	5 2.1	5 4.6	5 7.0	.....	+2.5	+2.4	.....	.....	.....				
14	4 5.1	4 4.7	4 6.2	4 8.3	.....	- .4	+1.5	+2.1	.....	.....	13	5 3.7	5 6.0	5 8.4	.....	+2.3	+2.4	.....	.....	.....				
21	4 5.8	4 5.9	4 7.2	4 9.2	.....	+ .1	+1.8	+2.0	.....	.....	18	5 6.5	5 9.4	5 11.9	6 2.1	+2.9	+2.5	+2.2	.....	.....					
28	4 3.7	4 5.1	4 6.4	4 8.5	.....	+1.4	+1.3	+2.1	.....	.....	27	5 7.2	5 10.3	6 .9	6 3.1	+3.1	+2.6	+2.2	.....	.....					
Mar. 7	4 1.6	4 3.2	4 4.8	4 6.9	.....	+1.6	+1.6	+2.1	.....	.....	Mar. 5	5 5.2	5 8.0	5 10.5	6 1.1	+2.8	+2.5	+2.6	.....	.....					
14	4 2.1	4 3.9	4 5.5	4 7.7	.....	+1.8	+1.6	+2.2	.....	.....	12	5 3.8	5 6.1	5 8.4	5 10.7	+2.3	+2.8	+2.3	.....	.....					
21	4 1.4	4 2.8	4 4.4	4 6.5	.....	+1.4	+1.6	+2.1	.....	.....	19	5 2.7	5 4.2	5 6.5	5 8.9	+1.5	+2.3	+2.4	.....	.....					
28	4 1.0	4 2.1	4 3.6	4 5.7	.....	+1.1	+1.5	+2.1	.....	.....	26	4 10.9	5 .4	5 8.0	5 5.4	+1.5	+2.6	+2.4	.....	.....					
Apr. 4	.....	4 2.1	4 3.2	4 5.5	.....	.....	+1.1	+2.3	.....	.....	Apr. 2	.....	4 11.1	5 1.7	5 4.6	.....	+2.6	+2.9	.....	.....					
11	.....	4 2.9	4 4.3	4 6.4	.....	.....	+1.4	+2.1	.....	.....	9	.....	5 1.4	5 3.9	5 7.0	.....	+2.5	+3.1	.....	.....					
18	.....	4 5.5	4 7.0	4 9.1	.....	.....	+1.5	+2.1	.....	.....	16	.....	5 2.8	5 5.8	5 8.3	.....	+2.8	+2.7	.....	.....					
25	.....	4 5.5	4 7.2	4 9.2	.....	.....	+1.7	+2.0	.....	.....	23	.....	5 2.1	5 4.9	5 7.5	.....	+2.8	+2.6	.....	.....					
May 2	.....	4 5.3	4 7.1	4 9.0	.....	.....	+1.8	+1.9	.....	.....	30	.....	5 1.6	5 4.6	5 7.3	.....	+3.0	+2.7	.....	.....					
9	4 7.0	4 7.8	4 9.0	+ .8	+1.2	May 7	5 1.8	5 4.1	5 6.5	5 8.2	+2.3	+2.4	+1.7						
16	4 7.1	4 7.2	4 8.1	+ .1	+ .9	14	5 3.3	5 5.1	5 7.2	5 8.9	+1.8	+2.1	+1.7						
23	4 5.6	4 5.4	4 6.2	4 7.7	- .2	+ .8	+1.5	21	5 4.2	5 5.9	5 8.0	5 9.6	+1.7	+2.1	+1.6						
30	4 3.8	4 3.5	4 4.7	4 6.1	+1.2	+1.4	28	5 4.7	5 6.4	5 7.8	5 9.1	+1.7	+1.4	+1.3						
June 6	4 3.7	4 5.2	4 6.5	+1.5	+1.8	June 4	5 4.9	5 6.2	5 7.4	+1.8	+1.2						
13	4 3.5	4 5.0	4 6.6	+1.5	+1.6	11	4 10.7	5 .5	5 1.6	+1.8	+1.1						
20	4 1.6	4 3.6	4 5.4	+2.0	+1.8	18	4 8.8	4 10.8	5 .0	+2.0	+1.2						
27	4 2.4	4 5.1	4 7.2	+2.7	+2.1	25	4 8.3	4 10.6	5 .0	+2.3	+1.4						
July 4	4 1.3	4 4.6	4 6.8	+3.2	+2.2	July 2	4 8.8	4 11.0	5 .8	+2.2	+1.8						
11	4 7.3	4 .2	4 3.1	4 5.2	+2.9	+2.1	+2.1	9	4 9.4	4 10.9	5 .6	+1.5	+1.7						
18	4 6.1	3 10.7	4 1.8	4 4.0	+3.1	+2.2	+2.1	16	4 8.8	4 10.4	5 .1	+1.6	+1.7						
25	4 6.1	3 10.5	4 1.7	4 3.7	+3.2	+2.0	+2.4	23	4 9.8	4 11.4	5 .9	+1.6	+1.5						
Aug. 1	4 4.8	4 .4	4 2.4	+2.0	+2.4	Aug. 30	5 1.8	5 2.6	5 3.6	+ .8	+1.0						
8	4 1.8	.....	.....	3 9.6	3 11.5	.....	.....	.....	+1.9	+2.3	Aug. 6	5 6.2	.....	.....	5 3.1	5 4.0	.....	.....	+ .9	+2.2
15	4 2.9	.....	.....	3 10.6	4 .6	.....	.....	.....	+2.0	+2.3	13	5 8.0	.....	.....	5 6.0	5 6.2	.....	.....	+ .2	+1.8
22	4 3.5	4 5.6	.....	3 11.1	4 .7	+2.1	.....	.....	+1.6	+2.8	20	5 7.3	.....	.....	5 5.5	5 5.4	.....	.....	- .1	+1.9
29	4 3.3	4 5.5	.....	3 10.5	4 .4	+2.2	.....	.....	+1.9	+2.9	27	5 6.5	.....	.....	5 5.6	5 5.7	.....	.....	+ .1	+ .8
Sept. 5	4 1.5	4 3.7	3 8.5	3 10.7	+2.2	+2.2	+2.8	Sept. 3	5 8.8	5 7.6	5 7.60	+1.2						
12	4 1.9	4 4.0	3 8.8	3 11.1	+2.1	+2.2	+2.8	10	5 9.6	5 9.6	5 9.0	- .6	+ .6						
19	4 2.1	4 4.4	3 9.4	3 11.6	+2.3	+2.2	+2.5	17	5 6.7	5 6.2	5 5.9	- .3	+ .8						
26	4 9.4	4 11.5	4 2.9	4 6.0	+2.1	+3.1	+3.4	24	5 7.2	5 6.7	5 6.4	- .3	+ .3						
Oct. 3	4 9.1	4 11.4	4 2.6	4 5.8	+2.3	+3.2	+3.3	Oct. 1	5 6.4	5 5.7	5 5.70	+ .7					
10	4 9.8	4 11.8	4 4.0	4 8.9	+2.0	+2.9	+2.9	8	5 5.0	5 5.0	5 5.1	+ .1	- .1					
17	5 .4	5 2.5	4 7.5	4 9.8	+2.1	+2.3	+2.6	15	5 3.2	5 3.6	5 3.9	+ .3	- .7				
24	5 1.2	5 3.2	4 8.7	4 10.6	+2.0	+1.9	+2.6	22	5 2.7	5 3.9	5 3.8	- .1	- .1			
31	5 3.1	5 3.2	5 .8	5 3.6	+2.1	+2.8	+2.5	29	5 1.6	5 3.4	5 3.4	-1.8			
Nov. 7	5 3.2	5 5.8	5 11.9	+2.6	+3.3	Nov. 5	4 11.7	5 1.5	5 1.5	-1.8		
14	5 11.8	5 2.4	5 8.0	+2.0	+3.8	12	4 11.7	5 1.9	5 1.9	-2.2		
21	5 10.2	5 .9	5 6.3	+2.7	+3.9	19	4 11.3	5 2.1	5 2.1	-2.8	
28	5 6.0	5 8.3	5 1.7	+2.3	+4.3																	
Dec. 5	5 8.1	5 10.4	5 3.8	+2.3	+4.8																	
12	5 7.2	5 10.0	5 3.2	+2.8	+4.0	Dec. 26	4 10.8	5 1.1	5 1.5	5 2.0	+ .4	-3.2	
19	5 5.4	5 8.0	5 1.3	+2.6	+4.1	3	4 11.3	5 1.4	5 2.3	5 1.9	+ .9	-2.6	
26	5 4.8	5 7.3	5 9.1	5 1.4	+2.5	+1.8	+3.4	10	4 10.4	5 .6	5 1.4	5 .9	+ .8	-2.5	
											17	4 6.8	4 9.8	4 10.7	4 10.1	+ .9	-3.3
											24	4 4.0	4 7.1	4 8.1	4 7.2	+1.0	-3.2
											31	4 4.6	4 7.8	4 8.8	4 7.9	+1.0	-3.8

TABLE IV.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads				
	Mar.*	May*	July*	Oct.*	Mar.†	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.
1933																					
Jan. 7....	4 10.4	4 11.3	5 .4	.....	4 7.2	+ .9	+1.1	.....	.....	.....	Jan. 6....	4 3.9	4 5.4	4 6.8	.....	.....	.....	.....	.....	.....
14....	4 11.1	4 11.8	5 .8	.....	4 7.7	+ .7	+1.0	.....	.....	.....	13....	4 4.3	4 5.5	4 6.6	.....	.....	.....	.....	.....	.....
21....	4 9.6	4 10.0	4 11.2	.....	4 5.8	+ .4	+1.2	.....	.....	.....	20....	4 5.5	4 6.7	4 7.6	.....	.....	.....	.....	.....	.....
28....	4 9.2	4 9.4	4 10.7	.....	4 5.0	+ .2	+1.3	.....	.....	.....	27....	4 4.2	4 5.8	4 6.6	.....	.....	.....	.....	.....	.....
Feb. 4....	4 8.1	4 8.3	4 9.4	.....	4 4.0	+ .2	+1.1	.....	.....	.....	Feb. 3....	4 4.4	4 5.8	4 6.7	.....	.....	.....	.....	.....	.....
11....	4 7.6	4 8.1	4 9.4	.....	4 3.5	+ .5	+1.3	.....	.....	.....	10....	4 3.1	4 4.8	4 6.1	.....	.....	.....	.....	.....	.....
18....	4 7.1	4 8.1	4 9.6	.....	4 2.5	+1.0	+1.5	.....	.....	.....	17....	4 1.2	4 3.1	4 5.0	4 6.4	.....	.....	.....	.....	.....
25....	4 6.3	4 7.4	4 9.0	4 11.2	4 1.6	+1.1	+1.8	+2.2	.....	.....	24....	4 .9	4 3.1	4 5.0	4 6.7	.....	.....	.....	.....	.....
Mar. 4....	4 5.9	4 7.0	4 8.6	4 11.3	4 1.1	+1.1	+1.6	+2.7	.....	.....	Mar. 3....	4 1.4	4 3.6	4 5.5	4 7.2	.....	.....	.....	.....	.....
11....	4 7.8	4 8.4	4 10.0	5 .2	4 3.0	+ .6	+1.6	+2.2	.....	.....	10....	4 2.3	4 4.6	4 6.5	4 8.2	.....	.....	.....	.....	.....
18....	4 7.1	4 8.0	4 9.9	5 .1	4 2.1	+ .9	+1.9	+2.2	.....	.....	17....	4 1.8	4 3.6	4 5.7	4 7.8	.....	.....	.....	.....	.....
25....	4 6.9	4 7.4	4 9.3	4 11.6	4 1.9	+ .5	+1.9	+2.8	.....	.....	24....	4 1.3	4 2.9	4 5.0	4 7.2	.....	.....	.....	.....	.....
Apr. 1....	.....	4 6.9	4 8.8	4 11.2	.....	.....	+1.9	+2.4	.....	.....	Apr. 31....	.....	4 4.0	4 6.1	4 8.2	.....	.....	.....	.....	.....
8....	.....	4 7.5	4 9.4	4 11.5	.....	.....	+1.9	+2.1	.....	.....	Apr. 7....	.....	4 3.3	4 5.7	4 7.8	.....	.....	.....	.....	.....
15....	.....	4 7.9	4 9.9	5 .2	.....	.....	+2.0	+2.3	.....	.....	14....	.....	4 3.5	4 6.0	4 8.0	4 9.2	.....	.....	.....	.....
22....	.....	4 7.9	4 9.9	5 .2	5 1.6	.....	+2.0	+2.3	+1.4	.....	21....	.....	4 2.0	4 4.4	4 6.5	4 7.7	.....	.....	.....	.....
29....	.....	4 9.0	4 11.1	5 1.8	5 3.1	.....	+2.1	+2.7	+1.8	.....	28....	.....	4 1.4	4 3.0	4 6.4	4 7.5	.....	.....	.....	.....
May 6....	.....	4 11.6	5 1.4	5 3.8	5 5.4	.....	+1.8	+2.4	+1.6	.....	May 5....	.....	4 1.9	4 4.2	4 6.6	4 7.9	.....	.....	.....	.....
13....	.....	5 1.0	5 2.5	5 4.5	5 6.0	.....	+1.5	+2.0	+1.5	.....	12....	.....	4 4.0	4 5.9	4 8.1	4 9.2	.....	.....	.....	.....
20....	.....	5 .7	5 1.9	5 3.9	5 5.4	.....	+1.2	+2.0	+1.5	.....	19....	.....	4 3.6	4 5.4	4 7.9	4 9.1	.....	.....	.....	.....
27....	.....	5 .0	5 1.1	5 3.2	5 4.6	.....	+1.1	+2.1	+1.4	.....	26....	.....	4 4.4	4 6.2	4 8.9	4 10.3	.....	.....	.....	.....
June 3....	.....	.....	5 2.2	5 4.4	5 6.0	.....	.....	+2.2	+1.8	.....	June 2....	.....	.....	4 3.8	5 .2	5 2.0	.....	.....	.....	.....
10....	.....	.....	5 1.0	5 3.0	5 4.6	.....	.....	+2.0	+1.6	.....	9....	.....	.....	4 3.4	5 .0	5 2.1	.....	.....	.....	.....
17....	.....	.....	5 1.2	5 3.2	5 4.9	.....	.....	+2.0	+1.7	.....	16....	.....	.....	4 3.2	4 11.7	5 1.9	.....	.....	.....	.....
24....	.....	.....	5 2.0	5 4.3	5 6.0	.....	.....	+2.3	+1.7	.....	23....	5 3.7	.....	4 3.1	4 11.3	5 1.9	.....	.....	.....	.....
July 1....	.....	.....	5 3.6	5 6.5	5 8.5	.....	.....	+2.9	+2.0	.....	30....	5 3.6	.....	4 7.7	4 11.6	5 1.8	.....	.....	.....	.....
8....	6 .9	.....	5 6.4	5 8.8	5 10.9	.....	.....	+2.4	+2.1	+2.0	July 7....	5 3.7	.....	4 7.8	4 11.4	5 1.7	.....	.....	.....	.....
15....	6 2.7	.....	5 8.0	5 10.5	6 .6	.....	.....	+2.5	+2.1	+2.0	14....	5 5.1	.....	4 9.0	5 1.2	5 3.2	.....	.....	.....	.....
22....	6 3.1	.....	5 8.0	5 11.1	6 1.2	.....	.....	+2.5	+2.1	+1.9	21....	5 3.9	.....	5 1.4	5 4.6	5 6.9	.....	.....	.....	.....
29....	6 .1	.....	5 6.8	5 8.4	5 10.4	.....	.....	+2.1	+2.0	+1.7	28....	5 10.1	.....	5 3.8	5 6.0	5 8.3	.....	.....	.....	.....
Aug. 5....	5 11.8	.....	.....	5 8.2	5 10.2	.....	.....	.....	+2.0	+1.6	Aug. 4....	6 2.4	.....	.....	5 10.1	6 .4	.....	.....	.....	.....
12....	5 9.3	.....	.....	5 5.6	5 7.7	.....	.....	.....	+2.1	+1.6	11....	6 7.9	.....	.....	6 2.8	6 5.8	.....	.....	.....	.....
19....	5 5.2	.....	.....	5 1.2	5 3.3	.....	.....	.....	+2.1	+1.9	18....	6 2.2	6 4.0	.....	5 9.2	6 .2	+1.8	.....	.....	.....
26....	5 4.4	5 6.0	.....	5 .3	5 2.4	+1.6	.....	.....	+2.1	+2.0	25....	6 3.0	6 4.4	.....	5 10.2	6 1.0	+1.4	.....	.....	.....
Sept. 2....	5 6.1	5 8.0	.....	5 2.0	5 4.1	+1.9	.....	.....	+2.1	+2.0	Sept. 1....	6 2.4	6 3.7	.....	5 9.2	6 .2	+1.3	.....	.....	.....
9....	5 6.4	5 8.3	.....	5 2.2	5 4.4	+1.9	.....	.....	+2.2	+2.0	8....	6 2.0	6 3.3	.....	5 8.6	5 11.7	+1.3	.....	.....	.....
16....	5 4.4	5 6.2	.....	4 11.8	5 2.8	+1.8	.....	.....	+2.5	+2.1	15....	6 1.5	6 2.8	.....	5 8.1	5 11.0	+1.3	.....	.....	.....
23....	5 4.0	5 5.9	.....	4 10.7	5 1.8	+1.9	.....	.....	+2.6	+2.7	22....	5 10.7	7 .0	.....	5 4.4	5 7.8	+1.3	.....	.....	.....
30....	5 1.3	5 3.1	.....	4 8.4	4 11.1	+1.8	.....	.....	+2.7	+2.2	29....	5 8.6	5 10.4	.....	5 1.8	5 5.4	+1.8	.....	.....	.....
Oct. 7....	4 11.2	5 .4	.....	4 6.9	4 9.0	+1.2	.....	.....	+2.1	+2.2	Oct. 6....	5 5.6	5 7.4	.....	4 11.1	5 2.4	+1.8	.....	.....	.....
14....	4 9.0	4 10.2	.....	4 4.4	4 6.2	+1.2	.....	.....	+1.8	+2.3	13....	5 7.5	5 9.1	.....	5 1.4	5 4.3	+1.6	.....	.....	.....
21....	4 8.2	4 9.8	.....	4 3.5	4 5.2	+1.6	.....	.....	+1.7	+3.0	20....	5 5.8	5 7.4	.....	4 11.5	5 2.2	+1.6	.....	.....	.....
28....	4 10.8	5 .4	.....	4 3.0	4 7.7	+1.6	.....	.....	+1.7	+3.1	27....	5 4.8	5 6.4	.....	4 10.2	5 .8	+1.6	.....	.....	.....
Nov. 4....	4 10.4	4 11.8	.....	4 7.1	4 11.4	+1.4	.....	.....	+3.3	+3.3	Nov. 3....	5 3.7	5 5.0	.....	.....	4 11.8	+1.3	.....	.....	.....
11....	4 9.0	4 10.5	.....	4 5.8	4 11.5	+1.5	.....	.....	+3.2	+3.2	10....	5 4.5	5 5.9	.....	.....	5 .7	+1.4	.....	.....	.....
18....	4 8.2	4 9.9	.....	4 5.1	4 11.7	+1.7	.....	.....	+3.1	+3.1	17....	5 3.4	5 4.3	.....	.....	4 10.0	+1.9	.....	.....	.....
25....	4 8.0	4 9.6	.....	4 4.9	4 11.9	+1.6	.....	.....	+3.1	+3.1	24....	5 .4	5 2.7	.....	.....	4 7.9	+2.3	.....	.....	.....
Dec. 2....	4 6.1	4 7.7	.....	4 2.9	.....	+1.6	.....	.....	+3.2	+3.2	Dec. 1....	5 1.7	5 3.9	5 5.5	.....	4 8.9	+2.2	+1.6	.....	.....
9....	4 5.1	4 6.6	4 7.9	.....	4 2.2	+1.5	+1.3	.....	+2.9	+2.9	8....	5 2.8	5 5.0	5 6.5	.....	4 10.0	+2.3	+1.5	.....	.....
16....	4 4.0	4 6.0	4 7.4	.....	4 1.7	+1.4	+1.4	.....	+2.9	+2.9	15....	5 1.7	5 3.7	5 5.2	.....	4 9.4	+2.0	+1.5	.....	.....
23....	4 3.7	4 5.2	4 6.2	.....	4 .8	+1.5	+1.0	.....	+2.9	+2.9	22....	4 11.8	5 2.0	5 3.6	.....	4 7.8	+2.2	+1.6	.....	.....
30....	4 4.0	4 5.5	4 6.7	.....	.....	+1.5	+1.2	.....	.....	.....	29....	5 .0	5 2.0	5 3.6	.....	4 8.4	+2.0	+1.6	.....	.....

* New contract, duty paid, if any.

** "Old contract," buyer paying duty, if any.

† "New" March and May.

TABLE IV.—Continued

Week ending	Prices					Spreads					Week ending	Prices					Spreads										
	Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.		Mar.	May	July	Oct.	Dec.	Mar.—May	May—July	July—Oct.	Oct.—Dec.	Dec.—Mar.						
1935											1936																
Jan. 5...	4 11.7	5 1.8	5 3.3	.....	.....	+2.1	+1.5	.....	.....	.....	Jan. 4...	6 6.6	6 5.0	6 5.0	.....	.....	-1.6	.0	.....	.....	.....			
12...	5 .0	5 2.0	5 3.6	.....	.....	+2.0	+1.6	.....	.....	.....	11...	6 6.2	6 4.0	6 4.1	.....	.....	-2.2	+ .1	.....	.....	.....			
19...	4 10.5	5 .5	5 2.2	.....	.....	+2.0	+1.7	.....	.....	.....	18...	6 7.6	6 4.7	6 4.5	.....	.....	-2.9	- .2	.....	.....	.....			
26...	4 11.0	5 1.1	5 3.0	.....	.....	+2.1	+1.9	.....	.....	.....	25...	6 7.1	6 4.3	6 4.5	.....	.....	-2.8	+ .2	.....	.....	.....			
Feb. 2...	4 9.7	5 .5	5 2.4	.....	.....	+2.8	+1.9	.....	.....	.....	Feb. 1...	6 4.6	6 2.5	6 2.8	.....	.....	-2.1	+ .3	.....	.....	.....			
9...	4 8.3	4 11.4	5 1.5	.....	.....	+3.1	+2.1	.....	.....	.....	8...	6 2.3	6 1.4	6 2.3	.....	.....	- .9	+ .9	.....	.....	.....			
16...	4 7.7	4 11.0	5 1.2	.....	.....	+3.3	+2.2	.....	.....	.....	15...	6 .2	6 .3	6 1.6	.....	.....	+ .1	+1.3	.....	.....	.....			
23...	4 7.8	4 11.1	5 1.3	.....	.....	+3.3	+2.2	.....	.....	.....	22...	5 11.7	6 .3	6 1.6	.....	.....	+ .6	+1.3	.....	.....	.....			
Mar. 2...	4 7.6	4 11.1	5 1.4	.....	.....	+3.5	+2.3	.....	.....	.....	29...	6 .4	6 1.1	6 2.5	.....	.....	+ .7	+1.4	.....	.....	.....			
9...	4 8.4	4 11.6	5 1.9	5 3.8	.....	+3.2	+2.3	+1.9	.....	.....	Mar. 7...	5 11.4	6 .7	6 2.4	.....	.....	+1.3	+1.7	.....	.....	.....			
16...	4 8.3	4 11.2	5 1.5	5 3.7	.....	+2.9	+2.3	+2.2	.....	.....	14...	6 1.0	6 2.1	6 3.9	.....	.....	+1.1	+1.8	.....	.....	.....			
23...	4 11.4	5 1.4	5 3.0	5 5.1	.....	+2.0	+1.6	+2.1	.....	.....	21...	6 .0	6 1.0	6 2.3	6 3.3	.....	.....	+1.0	+1.8	+ .5	.....	.....			
30...	5 1.3	5 3.0	5 4.8	5 6.8	.....	+1.7	+1.8	+2.0	.....	.....	28...	5 11.4	6 .8	6 2.5	6 2.4	.....	.....	+1.4	+1.7	- .1	.....	.....			
Apr. 6...	.....	5 4.6	5 6.8	5 8.6	.....	.....	+2.2	+1.8	.....	.....	Apr. 4...	.....	6 .8	6 2.1	6 1.6	.....	.....	+1.3	+1.3	- .5	.....	.....			
13...	.....	5 5.4	5 7.8	5 9.8	.....	.....	+2.4	+2.0	.....	.....	11...	.....	6 .9	6 1.4	6 .6	.....	.....	+ .5	- .8	.....	.....	.....		
20...	.....	5 6.0	5 8.5	5 10.5	5 11.8	.....	+2.5	+2.0	+1.3	.....	18...	.....	6 1.6	6 2.7	6 2.7	.....	.....	+1.1	.0	.....	.....	.....		
27...	.....	5 5.0	5 7.5	5 9.3	5 10.5	.....	+2.6	+1.7	+1.2	.....	25...	.....	6 2.1	6 3.5	6 3.4	.....	.....	+1.4	- .1	.....	.....	.....		
May 4...	.....	5 3.9	5 6.9	5 9.0	5 10.2	.....	+3.0	+2.1	+1.2	.....	May 2...	.....	6 .6	6 2.0	6 1.9	.....	.....	+1.4	- .1	.....	.....	.....		
11...	.....	5 3.8	5 6.0	5 8.3	5 9.5	.....	+2.2	+2.3	+1.2	.....	9...	.....	6 .1	6 .6	6 .4	.....	.....	+ .5	- .2	.....	.....	.....		
18...	.....	5 2.8	5 5.2	5 7.4	5 8.6	.....	+2.4	+2.2	+1.2	.....	16...	.....	6 .1	6 .0	5 11.6	.....	.....	- .1	- .4	.....	.....	.....		
25...	.....	5 1.5	5 3.3	5 5.4	5 6.5	.....	+1.8	+2.1	+1.1	.....	23...	.....	5 10.0	5 10.2	5 8.8	.....	.....	+ .2	-1.4	.....	.....	.....		
June 1...	.....	.....	5 2.7	6 3.5	5 4.2	.....	.....	+ .8	+ .7	.....	30...	.....	5 7.2	5 7.7	5 6.7	5 6.3	.....	+ .5	-1.0	- .4	.....	.....			
8...	5 4.4	.....	5 4.6	5 4.8	5 5.1	.....	.....	+ .2	+ .3	- .7	June 6...	.....	.....	5 8.3	5 6.9	5 6.2	.....	.....	-1.4	- .7	.....	.....			
15...	5 4.7	.....	5 3.5	5 3.9	5 4.2	.....	.....	+ .4	+ .3	+ .5	13...	.....	.....	5 8.0	5 7.6	5 6.9	.....	.....	- .4	- .7	.....	.....			
22...	5 3.5	.....	5 3.2	5 3.5	5 3.7	.....	.....	+ .3	+ .2	- .2	20...	.....	.....	5 10.2	5 10.0	5 9.5	.....	.....	- .2	- .5	.....	.....			
29...	5 3.4	.....	5 3.0	5 3.8	5 3.7	.....	.....	+ .8	- .1	- .3	27...	.....	.....	6 .0	5 11.9	5 11.3	.....	.....	- .1	- .6	.....	.....			
July 6...	5 1.4	.....	4 11.2	5 .7	5 .7	.....	.....	+1.5	.0	+ .7	July 4...	.....	.....	6 .0	6 .2	6 .0	.....	.....	+ .3	- .2	.....	.....			
13...	4 10.3	.....	4 8.7	4 9.9	4 10.2	.....	.....	+1.2	+ .3	+ .6	11...	.....	.....	6 6.6	6 6.4	6 5.9	.....	.....	- .2	- .5	.....	.....			
20...	4 10.7	.....	4 11.4	4 11.4	4 10.9	.....	.....	.0	- .5	- .2	18...	6 3.6	.....	6 7.7	6 6.7	6 5.9	.....	.....	-1.0	- .3	-2.3	.....				
27...	5 .7	.....	5 2.6	5 1.7	5 .8	.....	.....	- .9	- .1	- .1	25...	6 4.9	.....	6 9.3	6 8.6	6 7.6	.....	.....	-1.2	-1.0	-2.7	.....				
Aug. 3...	5 2.2	.....	.....	5 3.2	5 2.2	.....	.....	.....	-1.0	.0	Aug. 1...	6 8.4	.....	7 1.4	7 .7	6 11.5	.....	.....	- .7	-1.2	-3.1	.....				
10...	5 2.1	.....	.....	5 2.8	5 2.0	.....	.....	.....	- .8	+ .1	8...	7 2.5	.....	.....	7 8.3	7 6.3	.....	.....	.....	-2.0	-3.8	.....				
17...	5 1.9	.....	.....	5 2.4	5 1.9	.....	.....	.....	- .5	.0	15...	6 11.7	.....	.....	7 5.3	7 3.4	.....	.....	.....	-1.9	-3.7	.....				
24...	5 4.4	.....	.....	5 5.8	5 4.5	.....	.....	.....	-1.3	- .1	22...	6 11.2	.....	.....	7 5.5	7 3.3	.....	.....	.....	-2.2	-4.1	.....				
31...	5 4.4	.....	.....	5 6.5	5 5.1	.....	.....	.....	-1.4	- .7	29...	6 9.0	.....	.....	7 2.3	7 1.0	.....	.....	.....	-1.3	-4.0	.....				
Sept. 7...	5 5.7	5 8.2	5 6.8	-1.4	-1.1	Sept. 5...	6 10.6	7 2.3	7 1.8	-1.0	-3.2				
14...	5 10.5	6 .3	5 11.3	-1.0	- .8	12...	7 2.0	7 5.8	7 5.2	- .6	-3.2				
21...	6 2.0	6 5.9	6 4.0	-1.9	-2.0	19...	7 4.7	7 8.9	7 8.6	- .3	-3.9				
28...	5 11.4	6 6.5	6 2.4	-4.1	-3.0	26...	7 7.8	8 .6	8 .4	- .2	-4.6				
Oct. 5...	6 2.7	6 10.5	6 6.2	-4.3	-3.5	Oct. 3...	7 6.0	8 .3	7 11.9	- .4	-5.9			
12...	6 2.2	6 9.7	6 5.5	-4.2	-3.3	10...	7 8.3	8 3.0	8 1.3	-1.2	-6.5			
19...	6 1.8	5 1.5	6 9.2	6 5.4	-3.8	-3.6	17...	7 11.9	8 7.3	8 5.8	-1.5	-5.0			
26...	6 .9	6 .4	6 8.4	6 4.5	-3.9	-3.6	24...	7 9.7	7 9.0	8 6.1	8 3.9	-2.2	-6.2			
Nov. 2...	5 10.3	5 9.7	6 2.0	6 2.0	-3.7	-3.7	31...	7 8.4	7 7.7	8 6.4	8 2.4	- .7	-6.0			
9...	5 9.4	5 9.0	6 1.3	6 .4	-3.9	-3.9	Nov. 7...	7 7.1	7 6.2	- .9	-4.4		
16...	5 7.7	5 7.3	5 11.5	6 .4	-3.8	-3.8	14...	7 8.4	7 7.5	- .9	-3.7		
23...	5 9.4	5 9.5	6 .5	6 .5	-3.1	-3.1	21...	7 9.0	7 8.4	- .6	-3.1		
30...	5 10.6	5 10.6	6 1.5	6 .0	-2.9	-2.9	28...	7 9.6	7 8.9	- .7	-4.2		
Dec. 7...	5 8.8	5 8.6	5 11.9	6 .2	-2.9	-2.9	Dec. 5...	8 2.4	8 1.2	-1.2	-6.2	
14...	5 11.1	5 11.1	6 .8	6 .0	-1.7	-1.7	12...	8 4.8	8 3.5	8 2.5	-1.3	-7.6	
21...	6 2.7	6 2.6	6 5.3	6 .1	-2.6	-2.6	19...	8 10.0	8 8.7	8 7.6	-1.8	-7.9	
28...	6 3.8	6 2.9	6 7.4	6 .9	-3.6	-3.6	26...	8 9.9	8 8.3	8 6.7	-1.6	-9.5

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