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THE SEASONAL PATTERN OF WHEAT FUTURES PRICES UNDER THE LOAN PROGRAM*

The government loan program has exerted some important and well-recognized influences on wheat prices. The general level of wheat prices, given the production level that has prevailed, has been raised to an extent that is suggested by the size of the stocks acquired in administering the program. Wheat prices have also been stabilized by the program, in the sense that price variability over most time intervals is less than it was prior to the loan era. These dominant influences on wheat prices are reflected only incidentally in the present analysis. Other loan influences upon price, less well known than these, provide the focal points. The major emphasis is upon the seasonal pattern in wheat futures prices, while a secondary theme is that of the relationship between spot and futures prices. The results are interpreted in terms of an appraisal of the functioning of the futures markets.

The loan program and the futures markets are, of course, competitive and basically incompatible mechanisms, each reflecting a different approach to price determination. In practice, they have not proved completely incompatible, although a substantial diminution in use of the wheat futures markets is attributable to the fact that the Commodity Credit Corporation owns most of the seasonal surplus, which is therefore not hedged in the futures markets. It is relevant to consider the effect that one has on the other so long as they co-exist.

The evidence presented here will show that futures markets have produced a pattern of prices over seasonal intervals during the loan period that differs strikingly from the pre-loan pattern. It will be argued that the new pattern not only coincides with the loan program, but results from it. The evidence will then be set in the framework provided by some theory and analyses of futures price behavior, leading to a caveat against misinterpreting a loan-induced seasonal price pattern as being a typical futures price pattern. The earlier performance of the futures markets may also be better appreciated in the light of their performance under the loan influence.

* This paper represents an extension of my discussion of a similar topic at the 1961 Minneapolis Grain Exchange Seminar. I am grateful for the opportunity there provided to discuss these and related matters with Exchange members and their guests, and also for the financial support that the Exchange has furnished for this research. Errors of fact or interpretation are of course my own responsibility.

The Contrasting Seasonal Price Patterns

The contrast that is shown in Chart 1 may seem initially surprising, as it follows so closely the reminder that the loan program stabilized prices. The chart shows that the average movement of futures prices over the seasonal intervals has been much *greater* during the more recent of the two periods—the one that coincides roughly with the loan program. That the earlier statement and the chart are not contradictory, however, is seen in the fact that price variability reflects rises and declines separately, whereas in the averages shown in the chart rises offset declines. But the ease with which this distinction is made does not imply that no problem of measurement arose in the construction of Chart 1. One very important problem did arise, which is now approached through a detailed description of the procedure employed. This approach will reveal the measurement problem as a prerequisite to its solution, which will then be demonstrated.

Chart 1 depicts the pattern of wheat futures price movements on the three major United States markets, for two separate periods. The wheat price level was virtually the same at the end of each of these periods as at its beginning.[1] The first period extends from April 30, 1921, to April 30, 1943; or 22 full years over which wheat prices rose slightly. The second period extends from April 30, 1949, to April 28, 1961, or 12 full years over which prices declined slightly. The chart shows the average price change that results from measuring the change in the price of the July future between April 30 and June 30, of the September future between June 30 and August 31, of the December future between August 31 and November 30, and of the May future between November 30 and April 30.

The averages are taken by seasonal intervals; thus, for example, we can read from Chart 1 that the average price change at Chicago over 22 successive April–June intervals was approximately +2.5 cents per bushel. Also shown is the average price change for all intervals combined, that for Chicago, for example, for the 88 successive intervals of the 22-year period being approximately —.7

[1] Depending upon its purpose (and perhaps also upon one's view of the nature and purposes of speculation in futures), the measurement of price change over the period may be in futures or in some appropriate spot price quotation, including a "spot equivalent" futures price (the price of the expiring future during its delivery month). I think the latter more suitable for analysis of the problem here considered, but the basic contrast is unaffected by the choice of price measurement. The relevant prices on the last business day in April (middle of the daily range, or closing price, rounded to the nearest whole cent) were as follows:

	May future		July future		Spot price[a]	
Market	1921	1943	1921	1943	1921	1943
Chicago	130	144	107	143	144	—[b]
Kansas City	122	136	100	136	133	139
Minneapolis	120	137	115	137	142	138
	1949	1961	1949	1961	1949	1961
Chicago	218	189	194	189	—[c]	190
Kansas City	206	192	184	190	226	197
Minneapolis	215	213	203	213	222	214

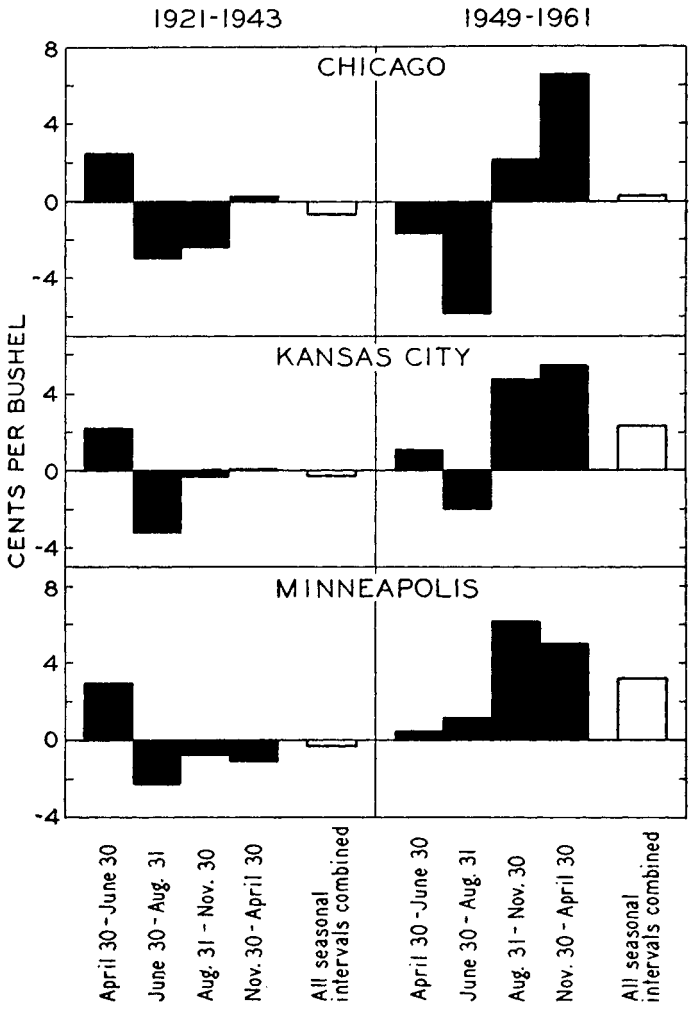
[a] No. 2 Red and better at Chicago; No. 2 Hard at Kansas City; and No. 1 Northern Spring at Minneapolis.

[b] No sales on April 30; the monthly range of prices was 146⅛ @ 164½.

[c] No sales on April 30; the monthly range of prices was 235¼ @ 242.

Prices, excepting for 1961, are from the annual reports of the respective markets; those for 1961 are from the *Wall Street Journal*.

CHART 1.—AVERAGE CHANGES IN WHEAT FUTURES PRICES ON THREE MARKETS, BY SEASONAL INTERVALS, FOR SELECTED PERIODS



cents per bushel. All the data are readily available and all computations have the merit of simplicity.[2]

[2] Two minor procedural devices have not been described in the text because they might make a basically simple computation appear more complicated than it really is: (1) The price changes were calculated after prices were rounded to the nearest cent in the first period, but without rounding in the second period. This was done because the price changes were relatively smaller during the second period, and because closing prices were conveniently available, which was untrue of the earlier period. (2) For the four intervals that terminated in 1953, Minneapolis price changes were substituted for Kansas City price changes because the Kansas City market was pushed far out of shape at that time by a decline in soft wheat prices to a level that permitted delivery of soft wheat at Kansas City, normally a hard wheat market. One might simply have eliminated the unrepresentative 1953 observations, but this would have introduced an undesirable break in an otherwise continuous price series. The substitution of Minneapolis price changes is warranted by the fact that price changes on these two markets tended to be almost exactly the same over all other intervals, but were drastically different during these four intervals. The general results for Kansas City are not greatly affected by this adjustment, but the change that it does make is in the direction of greater accuracy. The reader interested in pursuing the evidence of what happened on the Kansas City market in 1953 can consult *11*.

Since the purpose of Chart 1 is to reveal the contrast between two periods, an immediate objection to it might be that it portrays *absolute* price changes in cents per bushel, whereas, since the average price of wheat doubled between the two periods, the mean price changes were about the *same* in *percentage* terms in both periods. The most outstanding aspect of the apparent contrast, which is simply the magnitude of the average changes over seasonal intervals, may thus seem to be only an illusion which results from computing absolute instead of percentage changes. Or it might appear that, at best, one method of measurement is appropriate to the particular economic problem; while the other method, because it gives sharply contrasting results, is inappropriate.

The real issue in this instance, however, does not concern which method to employ, but rather how to portray the results of either method so as not to misrepresent the relevant facts. When they are properly portrayed, the results of the two methods will be seen to coincide very closely, and the question of which method to employ will have vanished. The average price change is meaningful only in the context of the variance of the series that is averaged: a ten-year average price change of two cents per year is meaningful if each year's price change is, for example, two cents, but has virtually no meaning if each annual price change exceeds, say, plus or minus 20 cents. When this consideration is taken into account, it turns out that absolute and percentage changes yield almost identical results, and that the contrast between the two periods is slightly understated in Chart 1.

The evidence on the foregoing is summarized in Table 1, where the mean values that were shown in Chart 1 are expressed as percentages of the mean values required for significance at the 5 per cent probability level, assuming the *t* distribution for samples of the size and variances observed. Alongside these results are shown those for the other method of measurement, in which the mean values first obtained are not the absolute values of Chart 1, but mean values of percentage changes in price over each seasonal interval. In obtaining the basic series for this computation, a price change from $1.90 to $2.10, for example, was expressed not as a 20-cent increase, but as a percentage of the average between

TABLE 1.—MEAN PRICE CHANGES, BY SEASONAL INTERVALS, EXPRESSED AS PERCENTAGES OF THE MEAN VALUES THAT WOULD BE SIGNIFICANT AT THE 5 PER CENT PROBABILITY LEVEL*

Market	June 30–Aug. 31 Method A	June 30–Aug. 31 Method B	Aug. 31–Nov. 30 Method A	Aug. 31–Nov. 30 Method B	Nov. 30–April 30 Method A	Nov. 30–April 30 Method B	Apr. 30–June 30 Method A	Apr. 30–June 30 Method B
				1921–1943				
Chicago	49	61	6	9	37	42	47	46
Kansas City	7	22	0	23	34	42	49	47
Minneapolis	13	18	21	9	44	54	38	38
				1949–1961				
Chicago	45	41	121	129	14	11	96	95
Kansas City	94	96	111	109	15	18	37	35
Minneapolis	122	125	94	91	9	11	18	20

* Method A refers to absolute price changes, Method B to percentage changes in price. See text for further explanation.

$1.90 and $2.10—or as a 10 per cent increase. The results of the two methods are seen in Table 1 to correspond very closely. This correspondence is important, not just because it removes the illusion of conflicting results that appears when variance is ignored, but for the confirmation that each measure lends to the other. The correspondence is not inherent in the two *methods,* whereas *economic* arguments can be advanced for the appropriateness of either. The measurement of these price characteristics has been particularly stressed because, after first undertaking to explain the contrast, this paper then considers some implications of the evidence in the context of some conflicting interpretations of futures prices which have involved measurement problems.

The Loan Program and the Contrast Between Periods

It seems that the explanation of the contrast between periods must be traced to the loan program. The two periods, having been chosen according to other criteria, do not coincide precisely with a pre-loan and loan period dichotomy; but they do reflect this very closely, and if they were redefined to coincide with the loan period the basic contrast would be altered only slightly. Obviously the mere temporal coincidence of the recent pattern with the loan program need not mean that its cause lies there, but we shall see that more than timing is involved. The loan program has undoubtedly been the dominant single influence on wheat futures prices in the recent period, hence it is logical to seek in it an explanation of such radically altered price behavior as that portrayed in Chart 1. In focusing first on the inter-*period* contrast, consideration of the inter-*market* contrast that appears in the recent period is deferred to the next section.

The novel phenomenon of the recent period is the rising tendency between June and December. This corresponds roughly with the period during which the farmer needs to decide whether or not to place his wheat under loan. The rate at which wheat moves under loan is a price determining variable throughout the period. The loan is said to be "working" as more wheat moves into loan, tightening up free market supplies and forcing prices up to or beyond loan levels. "Trading the loan," as it is often called, has now become a common approach to futures price forecasting.

To analyze the loan influence in somewhat greater detail, we may start with the reminder that the dominant short-term price-making influence in the pre-loan era was the supply, and the dominant uncertainty in this factor concerned the size of the harvest. Many other factors influenced price, notably changing supplies produced in other parts of the world which altered the demand for U.S. wheat; and still other factors, notably carryover, influenced domestic supply. But changes in the general level of all futures prices, without regard at this point for price spreads between futures, were most responsive to changed appraisals of influences bearing upon the supply. During and just prior to the harvest, its size constituted the most significant influence on price.

Under the loan program, if the loan level is high enough to be effective, i.e., if the free market will not absorb all production at loan equivalent prices or higher, a new major influence is exerted on price in the form of movements, uncertain as to amount and timing, into the loan. Movement into loan constitutes at least a temporary reduction in free supplies, although redemptions of the

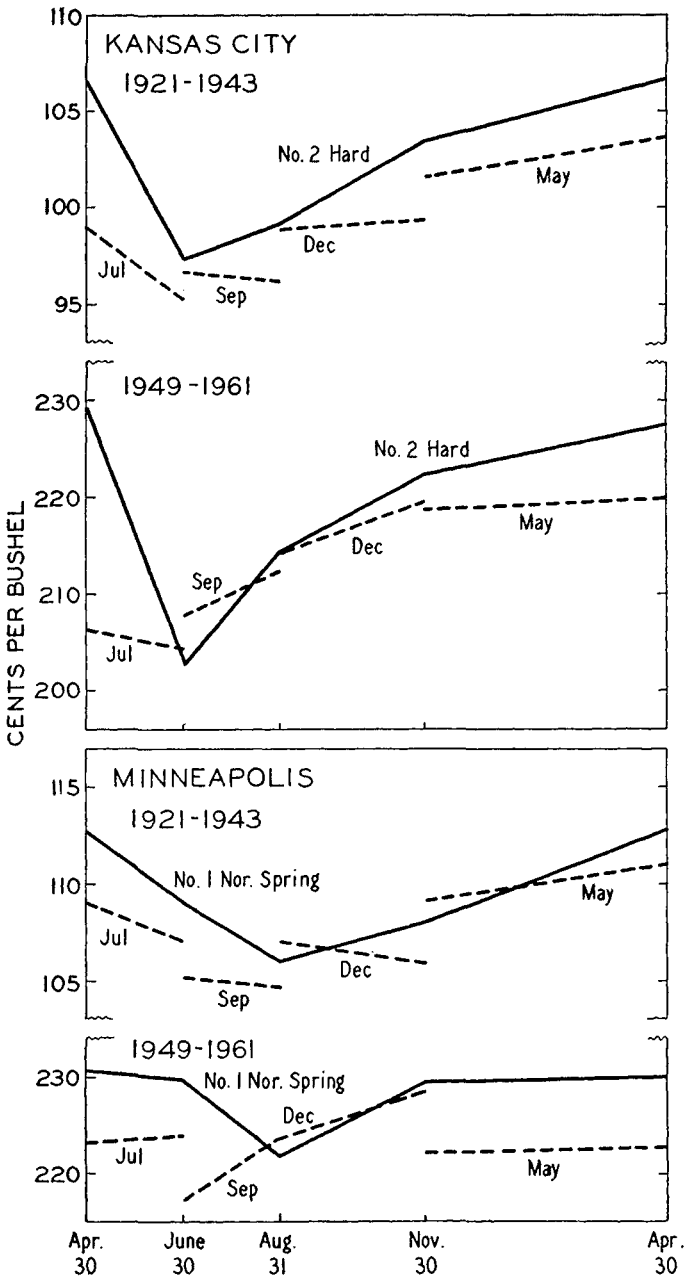
loan "collateral" (i.e., wheat) are permitted any time until March 31 following harvest, and there are, of course, other means by which wheat placed under loan can re-enter the free supply. The mechanism by which the loan supports prices is through such supply removal as actual loan entries entail, plus whatever influence the threat of such supply removal exerts upon prospective buyers—in other words, price is influenced by loan entries, actual and anticipated.

In situations of abundant production, such as the loan program has itself tended to stimulate, the operational direction of this price influence is upward following the harvest. Private buyers are not willing to pay prices above the loan equivalent when they can obtain quantities greatly in excess of their needs at the loan level. But there is good reason for them to bid below the loan level, namely, that some quantities are certain to be available at such prices. If the free market equilibrium solution for a particular crop year would be, say, 800 million bushels at $2.00 per bushel, then with a loan level of $2.00 and production of 1,000 million bushels, 200 million bushels must move into loan before the equilibrium price rises to the loan level. Until this occurs, the deadline for loan entries being January 31 following harvest, the equilibrium price is lower than $2.00.

The movement of wheat into loan (more strictly speaking, the pledging of wheat as collateral for nonrecourse loans from the Commodity Credit Corporation) is a potential supply-diminishing factor of uncertain proportions at harvest time. The diminution and the uncertainty tend to prevail until the final date for loan entries; but when the harvest produces a smaller surplus the price may go more promptly to the loan level, or sometimes higher, with consequent reduction in the uncertainty regarding loan entries. The reason is twofold why sufficient loan entries do not occur immediately after harvest to bring the price to the loan level before any transactions occur at lower prices. In the first place, prices can fall far below loan levels—some farmers are willing to sell wheat for less than the loan level—because for one reason or another sellers have not access to the loan. A predominant reason for this has been lack of approved storage space, without which wheat is unacceptable as loan collateral. Ineligibility for the loan program as a result of noncompliance with acreage allotments has also accounted for some sales of free wheat at less than loan prices. Some lack of information or of interest, and some political hostility on the part of farmers, inhibits the full effectiveness of the loan program. These considerations comprise the first part of the reason why the loan price level is not achieved immediately; the second part consists of the speculation engendered by the first part, for farmers who have access to loans may prefer to speculate on free market prices being pushed high enough by the loan entries of other farmers to provide a better outlet than the loan itself provides. These farmers may delay their choice until near the January 31 deadline, thus prolonging the uncertainty that surrounds the loan influences on supplies.

The foregoing considerations impose a tendency for prices to rise from depressed harvesttime lows, as displayed in Chart 2, where the contrast between markets as well as eras is apparent for both spot and futures prices. From harvesttime until December, the price rise in spot and futures was greater during the loan era, the rise starting later at Minneapolis because of the later harvest. This general tendency for prices to increase has been uneven from year to year, the

CHART 2.—AVERAGE CASH AND FUTURES PRICES OF WHEAT AT KANSAS CITY AND MINNEAPOLIS, ON SELECTED DATES FOR TWO SELECTED PERIODS



greatest depressions below loan levels and the resultant largest price increases occurring, as the theory would lead one to expect, in the years of greatest surplus production. In such years initial access to the loan has been reduced, particularly as storage space was inadequate, whereas loan entries have been high nonetheless, exerting an upward thrust on prices.

Chart 2 also reveals that the seasonal *relationship* between cash and futures prices at Kansas City and Minneapolis has changed.[3] This, too, would appear to be traceable to the loan program. During the earlier period the prices of all futures tended to stand in approximately the same relationship to cash prices at the beginning of the delivery month, as indicated by the quite uniform gaps between the cash price line and the terminal ends of the futures price lines. More recently, the post-harvest (new crop) futures that expire before the final loan entry date have stood higher relative to cash prices, on corresponding dates, than those (old crop) futures that expire after the final loan entry date. For Kansas City, this means that the July, September, and December lines terminate nearer the cash price line than does the May. For Minneapolis, where July is an old crop future, the September and December lines terminate nearer the cash line than do either the July or May.

A wide variety of factors can influence the cash-futures price relationship prior to the delivery month, but when the delivery month is reached these tend to be reduced to a comparison of the precise descriptions of wheat likely to be delivered in the futures and cash markets. Under the loan program a factor that is frequently mentioned as favoring the futures over the cash market during the movement into loan is shortage of storage space. Wheat delivered in the cash market can be, and ordinarily is, located in freight cars. Delivery in satisfaction of futures contracts must be in regular public warehouses, where storage charges are regulated, so that the receiver who is short of storage space may find it advantageous to accept such delivery and the assured "home" that comes with the wheat. Storage congestion is relieved by the time old crop futures mature, so that this factor would not lend relative strength to the May future at Kansas City or to the May and July futures at Minneapolis. The suggestion is that the difference in delivery regulations and practices between cash and futures delivery, taken together with insufficient storage space, explains the observed changes in the relationship between cash and futures prices at the beginning of the delivery month. This suggestion gains additional support from a related phenomenon which is not exhibited in Chart 2. At Kansas City, on-track deliveries against futures are permitted late in the delivery month, which may account for the fact that futures prices that are high in relation to cash prices early in the month tend to lose some of this advantage later in the month; whereas the reverse tendency is observable at Minneapolis where on-track deliveries are not permitted.

The Loan Program and the Contrast Between Markets

In order to focus attention on the interperiod contrast, we have so far largely ignored the intermarket contrast. There was no appreciable difference in patterns among the markets before the loan program was introduced: since then a contrast has become apparent. At Chicago, prices declined from April 30 to June 30 on the average to offset the rise that came between August 31 and November 30, with the result that the over-all futures price increase there was negligible; whereas at Kansas City, and especially at Minneapolis, over-all futures price increases were appreciable.

The Chicago futures contract is essentially a soft wheat contract (that being

[3] Chicago is not included in this comparison because of insufficient cash price quotations.

the lowest-priced wheat at Chicago over most of the period under review), whereas Kansas City is a hard winter contract and Minneapolis a hard spring contract.[4] The producers of hard spring wheats are generally conceded to be the best "loan users," with hard winter wheat producers not far behind; but the producers of soft red wheat are very poor "loan users." To be a good "loan user" means to take full advantage of the loan alternative, choosing it when it affords the slightest economic advantage over the market place. At one extreme, producers of soft red wheats east of the Mississippi typically plant small acreages to wheat in a mixed farming plan, often fail to establish loan eligibility, and frequently lack adequate storage bins for their wheat or economical access to commercial storage. Wheat prices are only partly influenced by the loan program in this area, where, in fact, many growers fail to participate in the annual referenda, and many of those who do participate vote against the program. Soft wheat prices can and do fall well below loan levels, especially during and immediately following the harvest when a flood of free wheat comes to market. The recent tendency for Chicago futures prices to decline during the pre-harvest period (April 30–June 30) may be best explained as essentially the opposite of the rising tendency observed after harvest. Until free wheat actually becomes available at less than loan prices, new crop futures tend to reflect the influence of the loan. Uncertainty regarding loan use tends to be resolved into too high estimates of price before harvest and too low estimates following harvest.

In the Kansas City area where the loan is more generally used, the futures price is not so prone to decline prior to harvest. Access to the loan has at times been limited by storage shortages, but the disposition to use the loan is far greater than in the soft wheat production area. The interseasonal decline in cash prices has been quite drastic (see Chart 2), but forecasts of this decline have shown less tendency to overestimate the price, as full intention to use the loan could be presumed.

In the Minneapolis area, still fuller loan use has resulted from a combination of disposition to use it plus more complete access. This is because wheat production has not been characterized by great surpluses, straining storage capacity to the extent it has in the winter wheat belt. The autumn price rise at Minneapolis has come more as a result of farmers' using the loan for a hedge, in their holding for higher prices, than as a recovery from levels sharply below the loan.

Risk Premiums

There have been several studies interpreting futures price behavior in terms of speculative profits, hedging costs, costs of carrying stocks, or risk premiums (*1, 2, 3, 5, 7, 8, 9*). Some of these have referred explicitly to Keynes's theory of "normal backwardation," which postulates a tendency for futures prices to underestimate the spot prices that subsequently prevail, and to rise as the futures contract approaches maturity, this rise being interpreted as the mechanism through which hedgers of stocks pay a risk premium to speculators in futures. Conflicting views concerning the characteristics or meaning of futures price behavior have arisen, partly out of different methods of measurement. The evidence shown in Charts 1 and 2 has pertinence in this context.

[4] See *4* for a more thorough treatment of this relationship.

A somewhat crude test of the theory of normal backwardation can be made on the assumption that hedgers hold short futures contracts while speculators hold long futures contracts. By and large, for whole classes of traders, hedgers' and speculators' positions are correctly described by this assumption. Examination of futures price behavior, continuously and without regard to the ever-changing balance of hedgers' or speculators' positions, or to any seasonal patterns in their holdings, affords an indication of whether any tendency toward backwardation exists. If backwardation (i.e., a tendency for futures prices to underestimate subsequent spot prices) does exist, it may be, but *need* not be, construed as a risk premium.

One direction in which such a test can be refined is that pioneered by Houthakker (*6*), who ascribed gains or losses to classes of traders, as reported for semimonthly intervals, by applying the price changes that occurred over these intervals. More recently, Cootner (*2*) has introduced a different refinement in which he takes account of the seasonal pattern of stocks, in terms of the visible supplies, and relates this to price changes. Cootner's article, and subsequent correspondence with him, led me to re-examine some measurements I had taken earlier, this time recasting them in the framework of changes over seasonal intervals, as in Chart 1. It is true that a significant contrast appears between the two eras there represented, and between Chicago and the smaller markets in the later era, even without considering seasonal patterns. But recasting the data by seasonal intervals led me to the present interpretation, which emphasizes the loan influence as my earlier interpretation (*5*) did not.

There are two aspects of the evidence summarized in Chart 1 that deserve emphasis in the present context. The first of these is simply the interwar data viewed without regard to subsequent events. Futures trading in wheat during this era represents the institution at its historical peak; for no other commodity, cotton possibly excepted, has so high a level of business in futures contracts been sustained so long. Conclusions about the performance of the wheat futures market might more appropriately be drawn from this period than from any other, and two important ones seem warranted. First, there was no general, as distinct from seasonal, backwardation. Despite the fact that the wheat price level, if it changed at all over the 22-year interval, rose somewhat, the aggregate change in futures prices was ever so slightly negative on all three markets. The mean change does not differ significantly from zero, and it is a remarkable degree of balance, rather than the opposite of normal backwardation, that is suggested.

Still viewing the interwar period by itself, but by seasonal intervals, the evidence regarding backwardation may seem less clear cut. Since none of the mean price change for this era, shown in the first half of Chart 1, is significant at the 20 per cent level, my own inclination is to conclude that no evidence of seasonal tendencies is found. Others may attach significance to the average price increases that were found for the November–April interval, and the average declines over the next seasonal interval, and conclude that there were some seasonal tendencies.

The second and more important point in the present context is drawn from the interperiod contrast again, considered this time from the standpoint of risk. Whether or not one accepts the null hypothesis that price changes over seasonal intervals did not differ significantly from zero over the first period, the contrast between periods must appear striking to anyone. If there was any tendency for

futures prices to change over the November–April interval, it was a rising tendency during the first era and a declining one during the later era. Moreover, during the two seasonal intervals extending from June 30 to November 30, the evidence for the interwar period surely suggests either no tendency to change or a slight declining tendency; whereas for the postwar period there is strong indication of a rising tendency during that part of the year. In the analysis appearing earlier in this paper, ascribing the major part of the interperiod contrast to the loan program, the explanation that runs in terms of a risk premium was not explicitly considered, although it may be said to have been implicitly rejected.

It is true, of course, that commercial stocks of wheat were built up, and hedged in futures markets, during those two seasonal intervals between June 30 and November 30 when futures prices displayed rising tendencies in the recent era. Is it reasonable to conclude that the rising tendencies reflect hedgers' payments of risk premiums to speculators? If hedging is done predominantly for reasons other than risk aversion, as Working has shown (*10*), this makes it appear unlikely that Chart 1 displays a risk premium. When we add to Working's more general evidence the specific evidence pertaining to risk in this case, we are led to reject the risk premium interpretation even more firmly. Price variability during the interwar period was much greater than it was later, under the loan influence; and presumably the risk of price change is reflected in variability. It was shown earlier that the loan program introduced a *new* element of uncertainty; but the over-all risk of price change was reduced, while the risk of price *decline* was reduced even more. That the rising tendency which does appear between June 30 and November 30 of the later era is a manifestation of risk is extremely difficult to credit in view of the fact that it failed to appear in an earlier era, when the risk was greater.

It is also true that the risk of price change, and especially that of price decline, has during the loan era been greater for the soft wheats that are hedged at Chicago than for the hard wheats that are hedged on all three markets. Yet the seasonal rise in futures prices has been, if anything, less at Chicago than elsewhere; this also tends to undermine a risk premium interpretation.

Conclusion

It may have been insufficiently appreciated by others, as it has been by me, how different has been the seasonal behavior of wheat futures prices in recent years from that experienced earlier. To draw conclusions from this recent behavior as though it were representative of other periods would thus appear to be erroneous. The most appealing and persistent interpretation of futures price behavior, that stated in terms of the risk premium, not only fails to gain support from this contrast, but encounters powerful counter evidence in it. The higher "risk premiums" appear to occur in periods or markets of conspicuously lower risk.

It is important not merely to avoid the wrong, but if possible to find the right explanation for these phenomena. The central issue is not whether futures markets evoke a risk premium but whether they provide more effective means of organizing a segment of economic activity than some alternative. One of the alternatives is the loan program that has been considered here, not indeed as an alternative to futures markets, but as a cause of their recent behavior. Considering

the two as alternatives, it would be unreasonable to judge their relative merits on the evidence from an era when the loan program exerted considerable influence on the price patterns emanating from the markets. My own interpretation is that transactions in wheat futures produced remarkably balanced forecasts of wheat prices during the interwar years. The loan program has created a situation in which these forecasts tend to be less well balanced, yet considering the handicap which this program has imposed on the markets, their adaptation to the new circumstances may also be deemed remarkable.

Governmentally sponsored measures to alter the functioning of this segment of economic activity may take diverse forms, some of which will impinge more heavily than others upon the functioning of futures markets. The distorted behavior of wheat futures prices described here would seem to owe much to the particular *form* of the price support operation in wheat. Another form, such as the direct-payment plan, would avert the distortion that stems from the loan option and storage features of the present arrangements. At a time when the coordination of economic activity through the market mechanism meets increasing competition from such alternatives as commodity agreements, vertical integration, and the loan program discussed here, it may behoove us to re-examine the performance of the market mechanism. If we dismiss that performance too lightly, as we are likely to do in misconstruing the price patterns under present conditions as typical ones, we only contribute to popular misconceptions and mistrust of the markets. It would be ironical if the alternatives to futures markets were to gain further strength from observations of market functioning that is in fact attributable to the operation of the alternatives. As revisions occur in governmentally sponsored efforts to influence price or income, it may be desirable to seek means that permit as much scope as possible to institutions which, when they were unhampered, performed as effectively as the wheat futures markets.

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