Measures and Price Effects of Changes in Speculation on the Wheat, Corn, and Soybean Futures Markets

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The composition of the open interest on the wheat, corn, and soybean futures markets has undergone significant changes in recent years. In absolute terms, both hedging and speculation have increased significantly since 1965. However, hedging use of the three markets has grown more rapidly and consequently speculative participation has declined relative to overall market size. In addition, as the data presented below show, positions are being held for significantly shorter periods of time on average in the more recent years.

These fundamental changes in market composition provide a unique opportunity to examine directly the influence of speculation on price behavior, a question which has received relatively little attention in futures market research and which is of importance to exchanges, regulators, and legislators. The purpose of this paper, then, is to describe the changes in the speculative composition of three markets, to develop measures of these changes and, finally, to present some preliminary results of tests of the relationship between speculation and price stability.

**Background**

The influence of speculation on commodity price stability has been a subject of both theoretical analysis and empirical testing. The theoretical analyses are varied in their conclusions and are rarely developed within the institutional constraints of futures markets. Whether the institutional setting is important is unclear. But, for example, as Gray (1967) points out, it is hedgers, not speculators, who make the allocative decisions which fundamentally influence the course of prices. And, hedgers make their storage and marketing decisions in response to market behavior, not solely or even necessarily in response to price expectations. Rutledge (1978) and Tomek (1980) provide good summaries of the available literature and also highlight its limitations.

The empirical literature is comprised almost entirely of indirect tests of the before-after variety. That is, some characteristic of price volatility is measured before the advent of futures trading for that commodity and is then remeasured after the innovation of futures markets. Dimensions of price which have been the subjects of these analyses include monthly variability, weekly variability, geographic variability, and annual variability. Commodities which have been examined include onions, Maine potatoes, live cattle, pork bellies, wheat, GNMA, and 90-day Treasury bills. Some researchers have looked directly at the dimension of interest, while others have looked at measures of residual variation after accounting for changes in the fundamentals of the system. The results of these analyses are generally favorable to futures markets: price variability, however defined, is smaller in the post-futures period. At worst, these tests show no significant difference in variability. Consistent as these results are, they are not direct tests of the influence of speculation on price stability. Reduced price variability could as easily be associated simply with the creation of a centralized market in a commodity system where there was no prior central market. That futures markets facilitate speculation could be incidental to the perceived reductions in variability.

Five analysts have addressed the question more directly and their results, while not uniform, tend to support the relatively weaker conclusion that speculation does not cause instability. Rutledge (1978), using daily trading volume as a measure of speculation, and Petzel (1980) using the aggregate positions of a small group of very large traders from a period predating speculative position limits to represent large-scale speculation, both find no statistically measurable
causal links between speculation and price variability. If anything, Rutledge’s results suggest that speculation responds to price variability and not vice versa. Gray (1967) found that aberrations in normal Kansas City-Chicago price relations were not associated with the positions of spread traders, the major source of speculation in the smaller, Kansas City wheat market. The Nathan Associates (1967) study of margins and speculation in futures markets found a tendency for periods with abnormally large price variations to be associated with inadequate speculation, not with excessive speculation. One other study, Ward’s (1974) examination of basis behavior in the frozen concentrated orange juice market, comes to an opposite conclusion. He finds a significant and negative association between the basis and an index of speculation, indicating a destabilizing effect of speculation. However, as will be developed below, the direct interpretation of these results is misleading and they may, in fact, be consistent with the other studies.

As the diversity among these studies reflects, a major obstacle to research in this area is the measurement of speculation. Three forms of speculation are often distinguished in the futures literature—scalping, spreading, and position trading—and each serves as the relevant measure of speculation in at least one of the five studies. Thus, while the results of these analyses absolve “speculation” of guilt, their very diversity confuses the issues. The remainder of this paper is devoted to a discussion of recent trends in speculation on the wheat, corn, and soybean markets and of measures of speculation which take into account the hedging composition of markets. Finally, tests of the relationship between the index measure of speculation and price variability are presented.

Recent trends in speculation on the corn, wheat, and soybean markets

Measures of the positions of spreaders and position traders can be obtained from the monthly commitments-of-traders data collected by the CFTC. There are two difficulties with these data. First, the reports only classify the positions of the large traders, not the entire market. Thus, the representativeness of these data depends largely on the size of the unclassified, small trader category. In addition, changes over time in the size of the residual category complicate interpretation of the changes apparent in the reporting categories. The solution adopted here was to allocate the positions in the nonreporting category to hedging, spreading, and position speculation according to statistical procedures suggested by the work of Larson (1961) and Rutledge (1979). Their precise formulas were not used, but the method relies upon their contributions (Peck, 1980b). Once the nonreporting positions have been statistically classified, they are added to the reporting positions and total hedging, spreading, and position trading are derived.

The second difficulty with these data is in the definition of spreading. Positions are considered to be spreads only if they are within one market or between markets for the same commodity. For example, in the soybean market, spreads between soybeans, meal, and oil would not be reported in the spreading category for any of the separate market reports. In general, the spreading categories on both the bean and the corn markets are thus nearly balanced, long and short, with differences matched by positions reported from the MidAmerica market for corn and soybeans. In the wheat market, reported spreading is significantly unbalanced, reflecting transactions between the Kansas City, Minneapolis, and Chicago markets. In terms of the markets of interest here, Chicago wheat, corn, and soybeans, intermarket spreading is
effectively position trading on the isolated market. Hence, all unbalanced spreading has been added to the long or short speculation category. The remainder is truly matching and, since it represents a restricted definition of spreading, it is here labeled matching so as to distinguish it from the more general concept.

The third form of speculation, scalping, is not measurable directly in market statistics. Scalpers’ trading appears in the daily volume statistics, but so also do the position changes of all other traders. However, the volume of trading relative to the open interest is often used as a proxy for the activities of this group. Working’s (1967) tabulations of the only complete evidence show that approximately 50 percent of the daily volume is accounted for by traders who maintain small or no overnight positions and, more important, that the variation in trading of this group “was in rough proportion to that of total trading in the market” (1967, p. 201). Average daily volume during a month divided by the open interest at the end of the month is the measure used here. Its limitations are severe and are discussed below.

Charts 1, 2, and 3 depict recent trends in the measures of the three kinds of speculation on the wheat, corn, and soybean markets, respectively. The most obvious change in the speculative composition of these three markets over the period 1964/65-1977/78 has been with position traders as a group. Long speculation as a percent of the open interest evidences the largest decline. Short speculation has declined also, though somewhat less markedly. Matching

Chart 1. Trends in speculation on the wheat futures market 1964/5 - 1977/8
trades show no particular trend on the three markets, increasing marginally in the wheat market and decreasing marginally in the corn and soybean markets. Scalping, as measured by the average daily trading volume, has increased significantly in all three markets. Note, however, that at least some, if not all, of the increase could be explained by changes in the length of time all other speculators (or hedgers) held open their positions. That is, the daily volume may have become less representative of the activities of scalpers over time.

The data presented in the charts are relative to the open interest in each market. Thus, while there had been a marked relative decline in speculative position trading, speculation has increased absolutely over the same period, just not as rapidly as overall market size has changed. Absolute or even relative trends are not the important variables, however, when considering the effects of changes in speculation on a particular market. The critical variable is one which would measure speculation relative to hedging. That is, declines in speculation relative to the open interest could be exactly offset by appropriate changes in hedging positions so as to have no net change in relative speculation. Working's speculative index (1960) was developed to measure this relationship and it, as well as several other possible measures, are described below.

The speculative index

The speculative index is understood most easily by considering the potential relationships between long speculation and long hedging, both measured relative to short hedging, in markets where short hedging exceeds long hedging. (The derivation is not limited to these situations. In markets where long hedging dominates, interchange the words long and short and all the results follow.) Define the speculative ratio as long speculation (SL) divided by short hedging (HS) and the hedging ratio as long hedging (HL) divided by short hedging.

In Chart 4, the speculative ratio \( \frac{SL}{HS} \), or \( \frac{SS}{HL} \) if \( HL > HS \) is the vertical axis and the hedging ratio \( \frac{HL}{HS} \), or \( \frac{HS}{HL} \) if \( HL > HS \) is the horizontal axis. The data points are crop-year averages of these ratios in the wheat, corn, and soybean markets from the period 1964/65-1977/78. The dotted line represents the minimal relationship between the two indices.

For example, if there is no long hedging, the hedging ratio is zero and the speculative ratio must be at least equal to one. That is, there must be at least enough long speculation to match the short hedging. Each point on the dotted line represents a similar minima. All possible combinations of short and long speculation with short and long hedging are accommodated by the graph since the definitions of the two ratios change depending on whether short or long hedging is largest. The relationships shown on Chart 4 appear to neglect short speculation. However, the fundamental identity between the positions, the sum of long and short speculation must equal the sum of long and short hedging, insures that, in fact, short speculation has not been ignored. Each point also implies a unique value for short speculation, given the three included variables.

The most obvious candidate for a speculative index is the distance of a specific observation to the dotted line, measured either vertically or perpendicularly. The difficulty with such a measure is that it explicitly assumes net hedging
should be balanced by speculation. Other research has clearly indicated the need for both long and short speculation in the presence of both long and short hedging (Peck, 1980a; Working, 1960). Hedgers' positions cannot be relied upon to be offsetting, though increasing balance in their long and short positions increases the probability that some may be offsetting. Indeed, the speculative index proposed by Working is an empirical reflection of the nonoffsetting character of net hedging and net speculation. This index is represented by the solid lines in Chart 4 which show three different levels of the index. All points on any one line are defined to represent equally "speculative" markets. These lines are defined by the equation

\[
\frac{SL}{HS} = (1 + \alpha) - (1 - \alpha) \frac{HL}{HS} \quad (HS \geq HL)
\]

where \([\alpha]\) is a parameter common to both the slope and the intercept term.

With the addition of the market clearing relation

\[
HL + SL = HS + SS = TO - M
\]

**Chart 4. The relationship between hedging and speculative ratios for wheat, corn, and soybeans 1964 - 1977**

*Based on annual averages of estimated total hedging and speculation from the "Commitments of Traders" reports.*

1) The Speculative Ratio is long speculation + short hedging when HS>HL.
short speculation + long hedging when HL>HS.

2) The Hedging Ratio is long hedging + short hedging when HS>HL.
short hedging + long hedging when HL>HS.
where \( T_{O} \) is the total open interest and \( M \) is matching, the above relationship can be manipulated to give

\[
\alpha = \frac{SS}{HL+HS} \quad (HS > HL)
\]

The speculative index \( (T) \) is then defined as

\[
T = 1 + \alpha = 1 + \frac{SS}{HL+HS} \quad (HS \geq HL)
\]

When long hedging predominates, the same procedures will yield

\[
T = 1 + \frac{SL}{HS+HL} \quad (HL \geq HS)
\]

The relationships shown in Chart 4 make clear the comparable values of any other index and the Working index. For example, the point A (corn, 1965/66) with \( T = 1.10 \) would have a vertical-distance index (VDI) value of 1.15. Point B (soybeans, 1975/76) represents an equally speculative market measured by the \( T \) index, but would show an increase (VDI = 1.18) with the distance index. In moving from the top left of the plot to the bottom right involves increased hedging balance in a market. In this situation, the Working index understates the change in the speculative nature of the market relative to other plausible measures based on the concept of speculation as a simple offset to net hedging demands.

The data in Chart 4 are not identified by year, but they tend to fall into two groups. Observations with a hedging ratio less than roughly .70 tend to be years in the 1964-65-1971/72 period. Those with larger hedging ratios tend to be observations from the 1962/73-1977/78 period. Thus, as a measure of the changes in the speculative composition of these markets, the Working index is a conservative measure which will, if anything, understate the changes.

One other candidate for a speculative index deserves mention since it was used by Ward (1974) in his study of liquidity in the FCOJ market. Ward defined a speculative index as follows:

\[
I = \frac{SL}{HS-HL} \quad (HS \geq HL)
\]

In the context of Chart 4, this index is represented as derived from lines with equations

\[
RS = (1 + \beta) - (1 + \beta) \cdot RH
\]

where \( RS \) is the speculative ratio, \( RH \) is the hedging ratio, and \( \beta \) is used to distinguish the model from the earlier index. It may be shown that \( I = 1 + \beta \).

Thus, the index defines a set of rays emanating from the horizontal axis at \( RH = 1.0 \). In situations approaching balanced hedging, the index will become tremendously unstable and will tend to assume very large values, even though an observation is not far from the line of minimum speculation. In fact, the Working index and the distance indices are inversely related to the Ward index.
as long hedging approaches short hedging. Thus, if almost any other indicator had been used in the Ward study, observations of “excessive” speculation would likely be observations of “insufficient” speculation and the conclusions of his analysis would be reversed.

Finally, as mentioned earlier, the data shown in Chart 4 cluster into two groups. Observations on the upper, left-hand side of the graph are annual averages from the 1964/65 to 1971/72 period while those on the lower right-hand side come from 1972/73-1977/78. The extent of the changes in the speculative ratio, the hedging ratio, and the Working index are shown by the data in Table 1. First, these data reveal the increasing importance of long hedging in all three markets. In the pre-1972/73 period, short hedging was larger than long hedging 78 percent of the time in the Chicago wheat market, 73 percent in corn, and 50 percent in soybeans. In the post 1972/73 period, the comparable percentages were only 51 percent, 22 percent, and 36 percent. Direct reflections of this change are the changes in the speculative and hedging ratios noted in sections III and IV of the table. The hedging ratios increased substantially and the speculative ratios decreased. Since the decreases were greater in absolute value than the increases, the speculative index also declined and these declines were significant in all three markets. Interestingly, the decline in the index was largest over the subperiods when long hedging was greater than short hedging. That is, while overall speculation declined in the 1972/77 period, short speculation was more inadequate than long speculation.

Table 1. Changes in relative speculation on the wheat, corn, and soybean markets, 1964/65-1977/78

<table>
<thead>
<tr>
<th></th>
<th>Chicago wheat</th>
<th>Corn</th>
<th>Soybeans</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Percent of observations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. HS ≥ HL</td>
<td>78</td>
<td>51</td>
<td>73</td>
</tr>
<tr>
<td>2. HL &gt; HS</td>
<td>22</td>
<td>49</td>
<td>27</td>
</tr>
<tr>
<td>II. Working’s speculative index</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. HS ≥ HL</td>
<td>1.256 (0.101)</td>
<td>1.131 (0.048)</td>
<td>1.122 (0.052)</td>
</tr>
<tr>
<td>2. HL &gt; HS</td>
<td>1.288 (0.111)</td>
<td>1.115 (0.065)</td>
<td>1.143 (0.056)</td>
</tr>
<tr>
<td>3. Total</td>
<td>1.263 (0.104)</td>
<td>1.123 (0.057)</td>
<td>1.128 (0.054)</td>
</tr>
<tr>
<td>III. Hedging ratio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. HS ≥ HL</td>
<td>0.414</td>
<td>0.829</td>
<td>0.664</td>
</tr>
<tr>
<td>2. HL &gt; HS</td>
<td>0.819</td>
<td>0.827</td>
<td>0.767</td>
</tr>
<tr>
<td>3. Total</td>
<td>0.502</td>
<td>0.828</td>
<td>0.692</td>
</tr>
<tr>
<td>IV. Speculative ratio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. HS ≥ HL</td>
<td>0.958</td>
<td>0.411</td>
<td>0.541</td>
</tr>
<tr>
<td>2. HL &gt; HS</td>
<td>0.710</td>
<td>0.388</td>
<td>0.489</td>
</tr>
<tr>
<td>3. Total</td>
<td>0.904</td>
<td>0.400</td>
<td>0.527</td>
</tr>
</tbody>
</table>

* Based on data from the monthly Commitments of Traders reports of the CFTC. The small trader positions have been allocated among the reporting categories. See text for definitions of the index, and the speculative and hedging ratios. Figures in parentheses are standard deviations.

**Price effects of the decline in speculation**

The important question is whether the changes in speculation have had significant effects on price stability in these three markets. The measure of price stability selected for this analysis is the monthly average of the daily trading range of the nearby future. The averages are monthly, reflecting the
availability of monthly estimates of the composition of the open interest and, hence, of the \( t \)-statistic. The daily range was selected for two reasons. First, much position trading is, in fact, scalping of the larger disturbances in price caused by the flow of orders into a market (Working, 1967). Second, the most immediate effects of changes in the adequacy of speculation on a market ought to be on short-term price variations. The constraint of monthly index observations led to the average of the daily ranges. Other measures ought to be examined as well and, in that sense, the results here are only preliminary.

Other factors also influence the average daily range. Most important, of course, the emergence of new information will increase the daily range as equilibrium prices change. Two variables, the monthly range of prices and the standard deviation of the average daily range, are included in each regression to reflect both the flow of and the certainty of new information. Second, the average daily range may also reflect the activities of true scalpers. Hence, the volume relative to the open interest, an imperfect measure of their activity, is also included in each equation.

The estimates of the hypothesized relationships are shown in Table 2. The observations were monthly, covering the period 1964/65-1977/78. In equations labeled I, all price variables were in levels, cents per bushel. In equations labeled II, the price variables were expressed as percentages of a monthly price. Given the "first approximation" character of the model, the results are impressive. Virtually all of the independent variables are significant and have reasonable signs. Without exception, the recent declines in speculation on these three markets are associated with increased variability of prices. On the other hand, increasing relative volume is associated with increasing price variability, consistent with the Rutledge (1978) analysis which found a tendency for the volume of trade to respond to price variability.

| Table 2. Average daily trading ranges and the speculative index in wheat, corn, and soybean futures, monthly, 1964/1965-1977/1978* |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Wheat           | Speculative index | Monthly trading range | Standard deviation of average daily range | Volume relative to open interest | \( R^2 \)  |
|                 | Constant         |                     |                               |                               |                 |
| I               | 1.503            | -2.395              | 0.041                         | 1.116                         | 13.85           | .8905           |
|                 | (0.91)           | (-1.84)             | (4.05)                        | (7.27)                        | (6.13)          |                 |
| II              | 0.009            | -0.008              | +0.028                        | 0.773                         | 0.045           | .8392           |
|                 | (2.41)           | (-2.74)             | (3.14)                        | (5.70)                        | (8.46)          |                 |
| Soybeans        | Speculative index | Monthly trading range | Standard deviation of average daily range | Volume relative to open interest | \( R^2 \)  |
| I               | 17.43            | -17.60              | -0.023                        | 1.576                         | 27.77           | .8435           |
|                 | (3.64)           | (-4.25)             | (-2.92)                       | (14.87)                       | (7.92)          |                 |
| II              | 0.027            | -0.025              | 0.006                         | 1.067                         | 0.046           | .7668           |
|                 | (4.18)           | (-4.54)             | (-0.73)                       | (9.35)                        | (9.43)          |                 |

* The dependent variable in Equation I is the average daily trading range of the nearby future. In Equation II, all price variables (average daily range, monthly trading range, and standard deviation of the average daily range) have been deflated by the midpoint of the monthly trading range. Figures in parentheses are \( t \)-statistics.

The only coefficients which appear inconsistent in these results are those for the monthly trading range variable in the soybean equations. More than the other
two markets, the soybean market had numerous months with large trading ranges accompanied by frequent limit price changes. The negative coefficients probably reflect these rather anomalous situations rather than a consistent pattern. Further work will explore more carefully this possibility.

Other needs include exploring more fully the question of appropriate functional form. Logic suggests nonlinear relationships: at some level, speculation should be adequate and no longer have a separate price effect. Indeed, at some other point, speculation may be identifiably excess, with increases being associated with increased variability. Other variables might be of importance, as, for example, interest rates and the implied changing costs of speculative capital.

**Conclusion**

The markets examined here are well-established, developed futures markets. They are, by any measure, the largest of the agricultural futures markets. Hedgers' use of all three markets has grown markedly in the decade of the 1970's. In fact, the growth in hedging use appears to have severely strained the capacity of each market. Speculation is inadequate and its inadequacy is reflected in increased price variability.

The most serious constraints on speculative activity are the position limits, set now at 3 million bushels. In the corn and soybean markets, the 3-million-bushel limit has been fixed since 1971. In the wheat market, position limits have only been 3 million bushels since 1976. In light of market growth and the now detectable price effects of inadequate speculation, surely these limits ought to be reexamined.

This analysis has focused on the effects of inadequate speculation. While not suggesting that no further comparative work needs to be done here, of at least equal importance is to begin analysis of situations of increasing and suspected excess speculation. Balanced, informed regulation can be expected only as both situations are identified and their effects determined.
Bibliography


Tom Hieronymus: In your basic measure of speculation, are you assuming that the nonreporting traders are speculators?

Anne Peck: No, I'm not.

Tom Hieronymus: Would you explain the source of the numbers?

Anne Peck: I've taken the nonreporting trade and allocated it between hedging and speculation. The statistical model indicates how much of that nonreporting trade is hedging, how much of the reporting trade is speculation, how much of the reporting trade is matching, and how restrictive the position limits are on the total open interest. As position limits become more and more restrictive, there's more and more impetus to report trade as hedging whenever possible. You would expect, therefore, the nonreporting trade to become more and more speculative, because if you could report it as a hedger, you would.

Tom Hieronymus: Am I right in thinking that the only real source you have is the monthly composition report of the CFTC?

Anne Peck: Yes, all this is based on those data. But to use those data, you have to say something about what this nonreporting trade is. One assumption is that all of them are speculators. I can tell you right now that assumption would absolutely, unequivocally not influence these results.

Tom Hieronymus: But you have devised a system by which you allocate the nonreporting traders between hedging and speculation.

Anne Peck: Yes. I followed the Larson and Rutledge work in that area.

Tom Hieronymus: Does this cut off prior to the change in the size of reporting level?

Anne Peck: No, it does not. It goes across the reporting level from 200,000 to 500,000. Relatively speaking, it got very small in these three markets particularly. It used to be that 30 to 40 percent of the trade was nonreporting. That's down to 10 or 15 percent.

Don McElmury: You seem to be suggesting that the speculative limits and their relationship to the growing volume of trade and the growing open interest have caused this impact on the decline in the speculative index. Is it possible that if there were not speculative limits in these markets that you might still have seen the same decline in speculative index and really no greater speculation than you have today? In other words, are there other reasons besides speculative limits to explain this decline in speculation relative to hedging?

Anne Peck: It is definitely possible that it's not just speculative limits which have created the relative decline in speculation, but they are an obvious culprit. In absolute numbers, of course, speculation has increased.

Don McElmury: It looks as though someone taught the long hedgers how to use the market. As a result, there is perhaps less use for speculators.

Anne Peck: Granting that the Working index or any of these indices show that the markets are more balanced, they are still less speculative today than they were ten years ago.

Don McElmury: Does your definition of speculation refer to someone who holds an open interest position at the end of the day or the end of the month or whenever?

Anne Peck: That's right.

Don McElmury: Did you look at the amount of speculative activity of day traders who buy, sell, scalp, and so on?
Anne Peck: The volume is all I have for that group.

Don McElmury: Since that's turning over faster, it seems that the current speculation is now much less risk-taking in that it goes on all day long, but doesn't hold a position at the end of the day.

Anne Peck: Yes, increases in this measure are a combination both of more day trading and speculators—or hedgers, indeed—who might have been carrying a position for five days, but who now want to carry it for only two days. Their open positions, therefore, are turning over more rapidly. Both those factors are included in the volume formula: volume divided by the open interest. Indeed, there's a positive relationship between the volume measure of this kind of activity and the price ranges you would expect. In much more highly volatile markets, you would expect people not to want to hold positions for a long period of time. The relative decline in speculation is significantly widening what you otherwise would expect the daily trading range to be.

Don McElmury: Are there some other disadvantages in tax treatments which would change the speculator's desire to hold long positions for longer periods of time?

Anne Peck: Since we are talking about days, I don't see any. We're talking about a change from someone holding positions for five days, on average, in the 1960's. The open interest turned over every five days for each of these markets, with slight difference among the markets. Now the number is down to two or three days, on average. I don't think the tax effect consideration is significant here.

Don McElmury: I'm thinking of the trader who might have held a position six months because of certain tax advantages. He would have been shown up in your reports all along during that time period. Today, since those same advantages aren't perhaps available, your conclusions might be different.

Anne Peck: I didn't see any significant decline in matching as a percent of the total open interest.

Those traders would have shown up in the matching numbers.

Don McElmury: Okay, let's assume that trading volume and open interest continues to grow. What's the logical conclusion?

Anne Peck: You need more speculation. As large as the markets are already, they suffer from inadequate speculation. One cure for that, presumably, would be to raise speculative limits.

Roger Gray: I've been waiting for Allen Paul to speak up because I thought he told us earlier that the evidence shows that the position limits had not constrained the level of speculation.

Anne Peck: The staff surveys of the number of traders who have positions approaching the speculative position limit show there aren't many of them. I remember reading that no one person ever touched the speculative limit position size. It's not all clear to me that there's not some sort of a barrier effect there. If you know the position limit is 3 million bushels, you may hold a position up to 2,750,000 and not push yourself all the way to the dead end.

Roger Gray: But even granting all this evidence and agreeing with Don and the Board of Trade that we need more speculation, you don't get any real indication that raising the position limit will bring you more speculation.

Anne Peck: I think that's true.

Allen Paul: With today's specialized business enterprise, it's possible that it wouldn't warrant someone to operate a professional pool of other peoples' money unless he can do it in a properly big way. We really don't know what the supply response is to raising a speculative limit. In other words, how many more people would come in not because they themselves know what to do, but because they think someone else does.

Anne Peck: But, you'll never know until you try. We've been under restrictive limits for eight years.

Don McElmury: Have the number of futures contracts and opportunities grown faster than
the ability to develop the speculative backup for these markets?

Anne Peck: I think that’s a definite possibility. Spec limits affect those who specialize in corn and who remain in corn, and also those others who might have come in and out as corn hedging changed to demand more different kinds of speculation. They aren’t there any more. They’re off trading something else. So the position limits have more impact because the people who are there can’t respond to these changes.

Steve Storch: I’m just questioning whether the converse wouldn’t be equally accurate. Is there evidence to show that other markets in that same time period became more attractive for speculators? During that period, for example, some speculators could see they could potentially get a greater return on their money by going into precious metals for instance rather than dealing in corn or wheat. Is that factored into your numbers? In other words, are there basic market forces at work that can explain the decrease in speculation devoid of speculative limits?

Anne Peck: No. I think that those constraints have become more important if anything. There may be other explanations, but I think that you get back to the fact that those people who are still there in the corn pit are more constrained in an overall market sense because there may be wasn’t this flow of people in and out as needed.

Tom Hieronymus: But in an absolute sense, in terms of bushels of corn or dollars of risk exposure, the amount of speculation is larger now than formerly by a very substantial margin.

Anne Peck: In an absolute sense that’s without question.

Tom Hieronymus: You’re saying that the growth in hedging has increased relative to the growth in speculation. So it’s not a matter of them walking away; they just didn’t walk in as fast as you would have liked them to come in.

David Kass: You’ve indicated that the decline in the speculative index has lead to the increase in price volatility. But I can see some very definite fundamental reasons for an increase in price volatility during the period. For example, the loss of CCC buffer stocks especially in the corn case; the Russian grain sales; and, of course, the oil prices and their effects on agriculture. It seems to me that the increase in the price volatility has driven away the speculators, rather than that the speculators have caused the increase.

Anne Peck: You can’t assert causality from any kind of regression analysis, and I accept that point. I tried to be very careful to say that I have either a positive or a negative association, depending on the instance.

Tom Hieronymus: Anne, we can logically draw the hypothesis that the increased volatility in the price of corn has absorbed additional speculation. It doubtless has because speculation is greater than it was.

Anne Peck: The absolute numbers have grown. I have included a variable in the equation to reflect more of the kinds of changes I would expect to see—for example, traders unwilling to hold longer-term position not leaving the market.

Robert Bear: Did you run these equations with a couple of the independent variables removed, in particular, the monthly trading range from standard deviation? And were the results the same?

Anne Peck: Yes, and that is what scared me. The spec index is tremendously significant with those things in there; without them, it’s overwhelmingly so! The t-statistics go up to about 16 or 20. The concern was that there were simply two trends. I put in the monthly trading range, the standard deviation of the range and the volume measure to net out the effect of the underlying trends in the two variables, thereby getting to the basic relationship here.

Steve Storch: Is there ever a point where there is excess speculation? What would that point be?
Anne Peck: I'm not suggesting that this kind of work is done, but I think the next interesting thing to do is to look at markets that appear to be much more highly speculative than these are. These index values are very clear. Almost any measure you can imagine of these kinds of things is almost down to zero now; 6 percent above zero is just not very far above zero. Now, we should look at markets which are more speculative for whatever reason to see if there are price effects on the other end and thereby identify this mythical point, if it exists, of excess speculation. Then you have to ask if there are obverse or converse effects. Has the speculative index risen larger beyond some point and, do you also get increased price variability which is not explained by other kinds of variables?

Steve Storch: Would the same analysis used on the grains easily be carried over to the financial futures markets?

Anne Peck: Definitely it could, though you have some data restraints. Reporting data began in June 1978, so you have a very short time series of reported positions in these markets. I've also heard that reporting data for those markets are not expected to be as reliable as the reporting data for the grain markets. For example, if you look at the surveys of the total open interest which Hobson has done with the CFTC, those numbers look quite different from the reporting numbers. He thinks it is due in part to reporting problems in those markets. So you'd have to be much more circumspect in your conclusions.
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