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**TAX TREATMENT OF TRADE IN CATTLE FUTURES:  
POSSIBLE IMPLICATIONS TO MARKET EFFICIENCY  
AND PRICE STABILITY**

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## Introduction

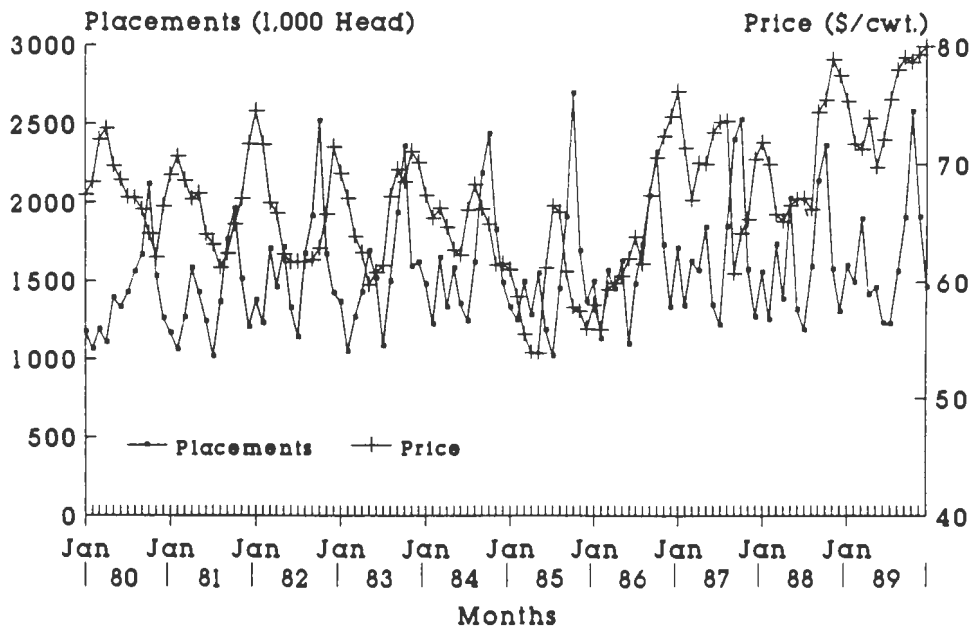
Cattle prices are highly variable. Examination of continuation charts of live cattle futures prices or monthly cash prices indicates price changes of \$10-15 per hundredweight are common within a 12-month time period. Variability of that magnitude imposes costs on producers, processors, and consumers in the form of exposure to volatile prices.

Over time, long-term supply and demand forces will determine cattle prices. The U.S. cattle herd had moved above 132 million head in 1975 before a long-term liquidation pushed 1988-91 levels below 100 million head. Widely discussed and documented demand problems, starting in the late 1970s, accentuated the supply-side pressures and helped prolong the herd liquidation. The market will correct cyclical and long-run imbalances between supply and demand.

It is not cyclical developments on the supply side or shifts in demand that cause the short-run price variations, however. Much of that price variability comes in response to short-run fluctuations in placements of cattle into the feedlots. Significant changes in placements bring highly predictable changes in fed cattle supplies, and cattle prices move in the opposite direction. Unless the impact of changes in placements is absorbed at the processor or retailer levels via margin adjustments, the highly inelastic demand for fed cattle at the feedlot level, around the -.5 level in most analyses, means that changes in supply will prompt extreme price movements.

Figure 1 provides a plot of monthly placements of cattle in the 7 major feeding states from 1980 through June of 1989. Also shown is the price of fed cattle in the Great Plains (Texas-New Mexico) feeding area with a time lag of 4 months. The inverse relationship is clear: when placements increase significantly, prices 4 months later tend to decline. Conversely, when placements are reduced, cattle prices in later months tend to be higher. Given that the exact weights at which cattle are placed can influence the length of the feeding period, the average four-month feeding program shows an impressive relationship between placements and prices four months later.

**Figure 1. Monthly Placements 7 Major Feeding States and Fed Cattle Prices, Lagged 4 Months, 1/80 - 12/89**



Lagged 4 Months

Any public policy change that reduced the variation in placements of cattle on feed would, conceptually, reduce fed cattle price variations. A reduction in the variability of fed cattle prices would help insure the viability of investments at the producer and processor levels and offer the consumer at the retail counter more stable prices. In an aggregate context, the economic viability of the beef sector would be protected and enhanced.

Cattle feeders do react to economic opportunities. Past research has shown that feeders respond to the price expectations offered by distant live cattle futures. And in the process of responding to those market incentives, cattle feeders tend to stabilize placements and fed cattle marketings over time (Koontz and Purcell). When the distant live cattle futures are trading higher reflecting a possible reduced supply of fed cattle later in the year, cattle feeders respond by increasing placements. The need for sharply higher prices to ration usage later in the year is reduced or eliminated. Conversely, when projected marketings are suggesting a surge in supplies and the probability of lower prices, placements tend to be reduced and the supply-side pressures are potentially reduced. Nonfed slaughter is also present, of course, but it is increasingly the fed cattle that determine the bulk of supply.

Any impediments to cattle feeders' opportunity to respond to market-related incentives will act to accentuate the short-run variability in placements, fed cattle supplies, and prices. In particular, any policy position that interferes with the market forces that work to maintain alignment between the fed cattle market, the feeder cattle market, and feed and other costs of feeding cattle will threaten the efficiency of the involved markets and prolong market imbalances. The result will be more variability in fed cattle supplies and in cattle prices than could otherwise be the case.

It is hypothesized that the Internal Revenue Service's (IRS) position on what constitutes speculative trade in cattle futures and the tax treatment of speculative losses in futures accounts interfere with the workings of the markets and tend to perpetuate and accentuate short-run price variability in the cash and futures markets for cattle.

The objective of the manuscript is to identify the possible impacts of IRS positions and policies and to lay out the types of research needed to measure the implications of what appears to be restrictive IRS positions. More specifically, the objectives are:

1. To describe the setting within which cattle feeders make decisions on placement of cattle and to identify the economic factors that are of major importance in the placement decision;
2. To analyze the relationship between discovered prices in the futures markets and the opportunities being considered by the cattle feeder;
3. To demonstrate the impact of denying cattle feeders the opportunity to participate in correcting imbalances between cash prices for feeder cattle and the pricing opportunities in the live cattle futures market; and
4. To present a research agenda that would be needed to test more specific hypotheses and provide guidelines to needed changes in IRS policies.

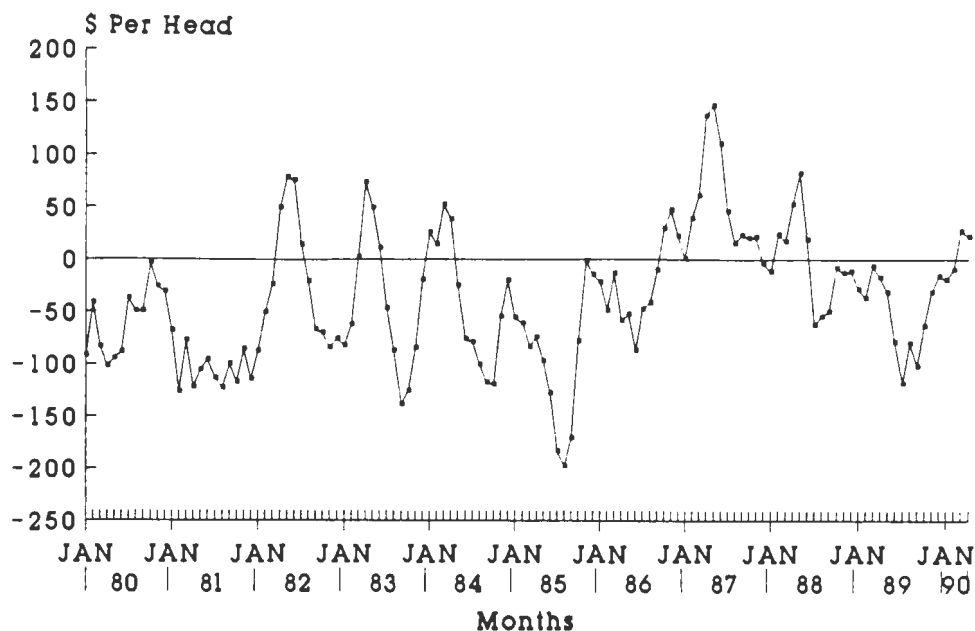
### ***Cattle Feeders' Economic Environment***

Cattle feeders buy feeder cattle of varying weights and grades and use their facilities and management ability to turn them into fed steers and heifers. The *Livestock and Poultry Situation and Outlook* published by the USDA provides detailed estimates of the costs of feeding cattle in the Great Plains feeding area. A number of inputs are involved, of course, but the costs are dominated by two major input costs: feeder cattle and corn (or grain sorghum) as the major feed ingredient.

In some feedlots, the majority of the cattle are owned by the owner/manager of the feedlot. Other feedlots specialize in "custom" feeding, meaning cattle are fed for individuals or companies who own the cattle and pay the feedlot for the use of its facilities and for management services. Regardless of the ownership of the cattle, the decision to place cattle revolves around feeder cattle costs, potential selling prices for fed cattle, and the related profit expectations.

The situation is fraught with risk and uncertainty. Figure 2 shows the realized net margins in the USDA series on Great Plains feeding activities from 1980 through 1989 if the cattle were fed as a cash market speculator with no forward pricing being employed. The variability of the net profit series is striking. The margins are on a per head basis, assuming 1,100 pound slaughter steers, and the losses often exceed \$100 per head.

Figure 2. Net Profits Per Head in the Great Plains Feeding Area by Months, January 1980-April 1990



The futures markets offer forward pricing opportunities, and research has shown that effectively managed hedging strategies can reduce the variability of profits without significantly reducing the average per head profit over time. But the situation is complex and uncertain, even for those who might be capable market analysts and capable managers of hedging programs. The cattle feeder is a price taker in the cash market for fed cattle, with little or no ability to secure prices above the prevailing day-to-day price for cattle of a particular grade and weight. Individual cattle feeders cannot influence corn prices, nor can they significantly influence the price of feeder cattle. In such an economic setting, the relationship between the important factors (current corn costs, current feeder cattle prices, and the distant live cattle futures) may not offer any opportunity for a positive net margin to be secured via hedging as placement of cattle is being contemplated.

Figures 3 and 4 illustrate the difficulties facing the cattle feeder. Across the 1980-89 data period, the prices offered by the midpoint of the high and low for the relevant distant live cattle futures contract, during the month the feeding program was begun, often did not cover the prevailing cost of feeder cattle and corn (Figure 3). When all variable costs and fixed costs are included, there was only one month during which the midpoint of the futures range would have covered all costs (Figure 4). The live cattle futures prices are not adjusted for a basis allowance in the illustrations, and to the extent a cattle feeder faces a negative basis (cash < futures), the illustrations would look even worse.

Some cattle feeders will achieve costs below those estimated by the USDA, and astute market analysts may be able to sell futures at prices above the midpoint of the range offered during the month. Even so, the opportunities are not frequent. Figure 5 shows the situation using the highest price

Figure 3. Margin Over Variable Costs Offered by the Midpoint of Distant Futures Prices, 1980-89

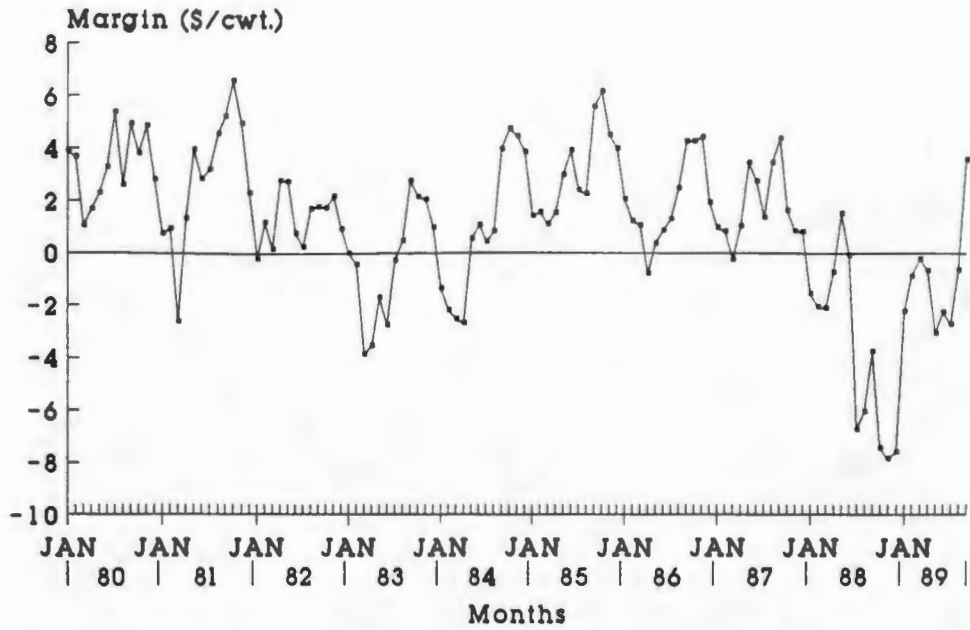
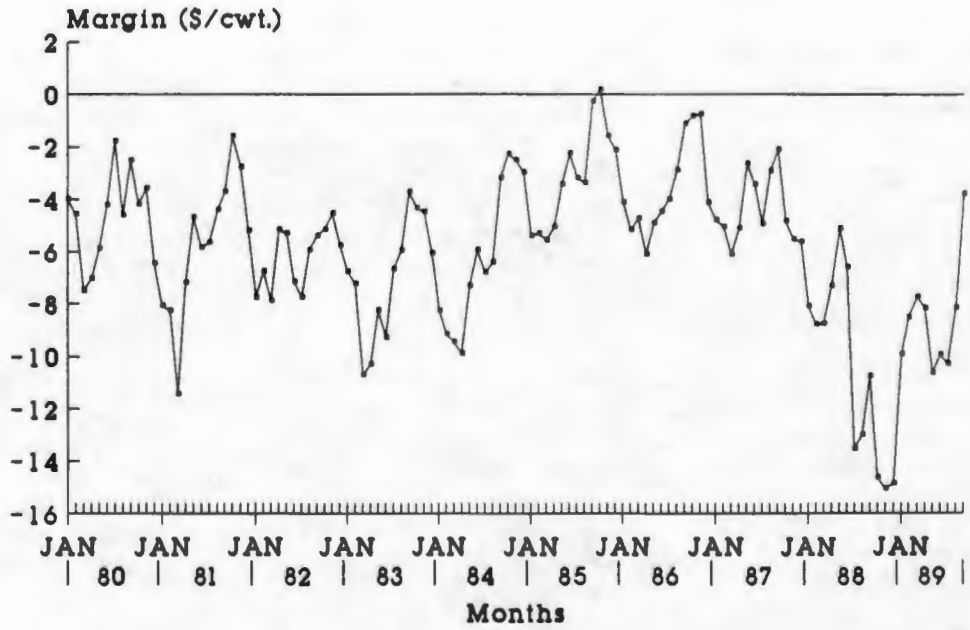
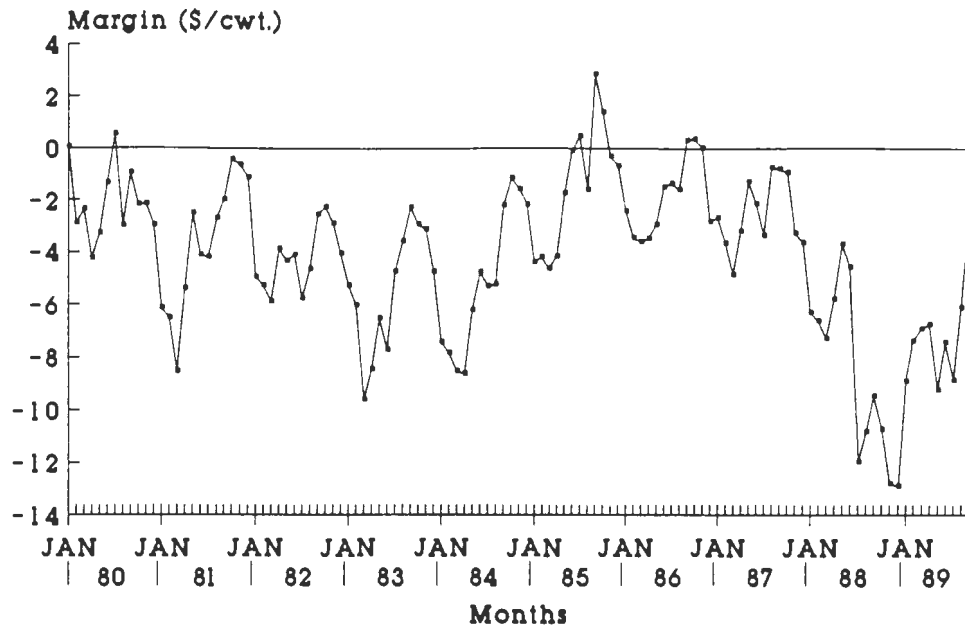


Figure 4. Margin Over All Costs Offered by Midpoint of Distant Futures Prices, 1980-89



offered by the distant futures contract during the month the cattle were or could be placed. There were only seven months during the period that prices above all costs could have been secured. If the feeding programs are to be hedged at profit, lower costs are required or the ending basis must be more favorable than the zero basis assumed here for the Great Plains feeding area.

**Figure 5. Margin Over All Costs Offered  
by the High Price of Distant Futures,  
1980-89**



Clearly, the cattle feeder frequently faces a situation in which cattle typically cannot be placed and fed, at prevailing feeder cattle and feed costs, and hedged at a profit when all costs are considered. Often, not even the variable costs can be covered and the feeder must either (1) leave the feeding pens empty and absorb the fixed costs, or (2) place the cattle in the hope that profitable prices will be offered during the feeding period. The net result is often a sporadic pattern of placements and the highly variable prices that come from volatile placements.

There is no economic reasoning that argues a cattle feeder should always be presented profitable opportunities in the form of futures prices at levels sufficient to forward price or hedge at a profit. The market is extremely competitive and there are no significant barriers to entry. Hence, prices would be expected to approach the average total cost of production for the most efficient producer in the long run. But short-run market imbalances between projected costs and the available pricing opportunities lead to variable supplies of fed cattle and variable prices. Such variability presents problems for the middlemen in the system. At the consumer level, both quantity and price are more variable over time because of the fluctuations at the feedlot level. If the duration of the imbalances between needed prices to at least breakeven and the forward pricing opportunities could be reduced, the system in its entirety would be more efficient.

In its simplest form, the markets are in a state of relative imbalance when:

$$FCC + FC > LCP$$

where:

FCC = cost of feeder cattle that could be placed using cash prices or the nearby futures (\$ per head):

FC = cost of inputs other than feeder cattle during the period, reflecting variable and fixed costs where fixed costs include a return on the capital investment (\$ per head); and

LCP = per head value of the finished steer using projected weights and available live cattle futures prices (\$ per head).

Evidence to this point suggests the above inequality is present in a majority of the cases and often tends to persist over several months. The markets are more nearly in a state of balance when:

$$FCC + FC = LCP$$

and FCC and FC are the costs as defined above that are incurred by efficient buyers of feeder cattle and feedlot managers who are well informed and do a good job in managing their feeding programs. This is the equilibrium position toward which the markets would be expected to move.

There are economic reasons that the market imbalance can persist across time periods. Corn prices are largely beyond the influence of cattle feeders as traders of cattle futures. Feed usage is typically 55-75 percent of the total use of corn, and hogs and poultry are a major user of corn in the U.S. Export movement is the most volatile component of total disappearance or use in corn. For purposes of this effort, it is assumed that activities by cattle feeders in the cash or futures markets for corn would exert only marginal and nominal influence on the market imbalances facing the cattle feeder. The imbalance cannot be corrected, in other words, by forcing feed costs down.

Cattle feeders cannot and should not dominate the price discovery process for feeder cattle and fed cattle. Feeder cattle futures will eventually adjust to changes in projected feeding costs (corn prices, in particular) and to changes in the distant live cattle futures prices which are largely determined by the number and weight distribution of the cattle already on feed. Live cattle futures will also reflect the consensus on what is happening to demand for beef at the consumer level, and will adjust to short-run changes in expectations for prices in the pork and poultry sector, to overall developments in the economy, and to changes in consumer incomes. Thus, while feedlots can exert some influence over what they pay for feeder cattle, the market imbalance cannot be corrected in the short run by pushing the costs of feeder cattle down.

Economic forces largely external to the cattle feeding and packing subsectors are also important. Light steers and heifers often get bid up in the cash market during March-May as producers buy for grazing programs. Prices of the yearling steers and heifers that are ready for the feedlot tend to move up with the light cattle prices. Increases in the cash market influence the futures markets, and feeder cattle futures move up. The result can be feeder cattle prices, in the cash and in the nearby futures markets, that are too high to allow profitable hedges given prevailing live cattle futures quotes. The imbalance may exist across several weeks or months, and is eventually "corrected" when periodic (monthly or quarterly) cattle on feed reports document reduced placements and the prices on distant live cattle futures move up reflecting reduced supply expectations.

What is needed to start the process of restoring an equilibrium and to minimize the duration of the imbalances between feeder cattle prices and forward pricing opportunities for fed cattle are well-informed traders in feeder cattle and live cattle futures who have a strong business-related interest in those markets. Large and full-time cattle feeders meet those criteria and are in an excellent position to make significant contributions to the price discovery process in feeder cattle and live cattle. Because of their direct involvement in cattle feeding, they have access to proprietary information and are in a better position to practice any needed arbitrage than are other traders in feeder cattle and fed cattle futures. For given corn costs, a market imbalance characterized by feeder cattle futures (nearby contract) sufficiently high relative to live cattle futures (distant contract) to eliminate profitable current hedges and any reasonable chance that profits will be offered during the feeding period could be corrected by selling the nearby feeder cattle futures and buying the distant live cattle



futures.<sup>1</sup> The literature documents an increasingly powerful role of the futures markets in the overall price discovery process for cattle, feeder cattle, and fed cattle (Oellermann, et al; Hudson and Purcell). But the cattle feeder faces strong obstacles to getting involved in the markets in this type of arbitrage activity in spite of their advantageous and well-informed positions.

### *IRS Policies, Positions*

The Internal Revenue Service tends to apply a very rigid test of what is hedging and what is speculative activity in futures markets. The essence of the criteria the IRS brings to the examination process is the "equal and opposite" requirement. That is, the futures position must never exceed the actual or expected position in the cash market (the "equal" test) and must be the reverse of the cash position (the "opposite" test). For the cattle feeder, this would mean being long feeder cattle futures and being short live cattle futures would be the only legitimate positions. Selling the nearby feeder cattle futures and buying the distant live cattle futures would be, according to this requirement, speculative trades.

In a hedge, any losses in the futures account are effectively deductible since the cattle feeder would pay taxes on the net income from the hedged feeding program. Losses on speculative trade in futures are not deductible for tax purposes. If there are capital gains in other areas and nonfutures investment alternatives, the losses can be used against those nonfutures capital gains. But if the futures trades are the only capital investment ventures, losses that can be claimed will range from \$0 to \$3,000 per year depending on the filing status (corporation, individual, etc.) of the feedlot. Thus, there are powerful tax-related impediments to cattle feeders getting involved in the markets to correct existing market imbalances. If taking short positions in the nearby feeder cattle futures and/or long positions in the distant live cattle futures lose money on either trade, those losses will not be deductible. The market relationships between feeder cattle and distant live cattle futures are critically important to the economic viability of feedlot owners' business on a day-to-day basis, but the only legitimate course of action is to wait for the imbalances to be corrected by other participants in the futures markets.<sup>2</sup>

### *Empirical Evidence*

Table 1 offers simple statistical documentation of the importance of feeder cattle prices to the profitability of the feedlot. The variables in the table are:

ALLCPRIC = selling price of fed cattle needed to cover all costs (\$ per cwt.);  
CCOST = corn cost (\$ per cwt.);  
INT = interest rate (percent); and

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<sup>1</sup> Such actions are similar to the widely discussed "reverse crush" in soybeans. When soybean processors cannot buy soybeans at going market prices and realize an acceptable crush margin because the selling prices of soyoil and soybean meal are too low in relative terms, they allegedly cut back on crush activities and take positions in the futures. Soybean futures are sold and oil and/or meal futures are bought, thus helping to correct the imbalance and allowing the processor to benefit from their positions in the futures markets. Such activities would and should face the same restrictions on what constitutes hedging that the cattle feeder faces.

<sup>2</sup> This position carries the implicit assumption that the tax treatment of losses ruled to be speculative is in fact a major concern for a cattle feeder or feedlot manager. A 20,000 head feedlot would trade up to 500 live cattle contracts to fully reflect that one-time capacity, and a \$1.00 per hundred move against the position would mean losses of \$200,000. Clearly, the feedlots will be reluctant to face that type of exposure in any event and the reluctance is intensified if any net losses for the year from futures trade are not deductible. A special survey conducted by the Commodity Futures Trading Commission on March 13, 1987 indicates feedlots held 4.5 percent of the short open interest in feeder cattle futures and 4.0 percent of the long open interest in live cattle futures. Since the average open interest for all holders of live cattle futures represented only about 30 percent of the on-feed count, it is clear the feedlots are not heavily involved in the markets. Involvement would be much less in the feeder cattle futures where open interest averaged 17,923 contracts (Kuserk).

FCPR = cash feeder cattle prices, Amarillo (\$ per cwt.).

Table 1. Regression Results for Corn Prices, Interest Rates and Feeder Cattle Prices as Determinants of Breakeven Selling Prices			
Dependent Variable	ALLCPRIC		
Adjusted R-squared	0.969		
F Statistic (3, 113)	1218.523		
Variable	Coefficient	T-Ratio	Mean of Variable
INTERCEPT	-0.4526	-0.384	
CCOST	3.4896	27.803	5.32
INT	0.2652	7.864	13.76
FCPR	0.6996	56.070	68.85

Across a 10-year period reflecting 120 possible feeding periods, The coefficient on the FCPR variable indicates a \$1.00 per hundred increase in feeder cattle prices increases the needed breakeven selling price (ALLCPRIC) by \$.70 per hundred. A \$.20 increase in the cost of corn would have essentially the same impact, given the coefficient of \$3.49 on corn costs measured in dollars per hundredweight. It is, therefore, the costs of feeder cattle and corn that dominate the needed breakeven selling price for fed cattle. These two economic variables, plus interest rates, explain 97 percent of the variability in the breakeven series for fed cattle.

Figures 6 and 7 provide additional evidence of the importance of the relationship between the price at which feeder cattle can be bought and the prices being offered in the futures market. In Figure 6, the realized net margins from the Great Plains feeding programs are plotted against cash feeder cattle prices minus the cash slaughter cattle prices that prevailed at the start of the feeding program. There is no relationship. Feeder cattle prices are *not* closely related to the prevailing cash prices for fed cattle at the time the cattle are placed.

Figure 7 provides a plot of the margin over feed and feeder cattle costs offered by the midpoint of the distant live cattle futures prices versus the same feeder cattle-fed cattle price differential used in Figure 6. A negative relationship is apparent, and statistical analysis confirms a significant negative relationship. The margins being offered by the distant live cattle futures increase as feeder cattle prices decline relative to slaughter cattle prices. The point here is that feeder cattle prices, either the current cash or the nearby futures, has been an important determinant of the margins being offered via pricing opportunities in the distant live cattle futures.

Figures 8 and 9 provide additional evidence. A negative relationship is apparent in Figure 8 which shows the relationship between the margin over feed and feeder cattle costs offered by the midpoint of futures and feeder cattle prices. In Figure 9, feeder cattle prices are replaced by corn costs, and there is no evidence of a statistically significant relationship. The two plots demonstrate that it is feeder cattle prices, not corn costs, that significantly influence the margin being offered by the distant live cattle futures. Those results should not be a surprise, of course. A 700 lb. steer at \$80 costs \$560, while 45 bushels of corn at \$3.00 costs \$135. It is and will be feeder cattle prices that dominate the cost side and influence profit possibilities facing the cattle feeder in a major way.

Figure 6. Net Margins Vs. Cash Feeder  
Cattle-Slaughter Cattle Price  
Differentials, Great Plains, 1980-89

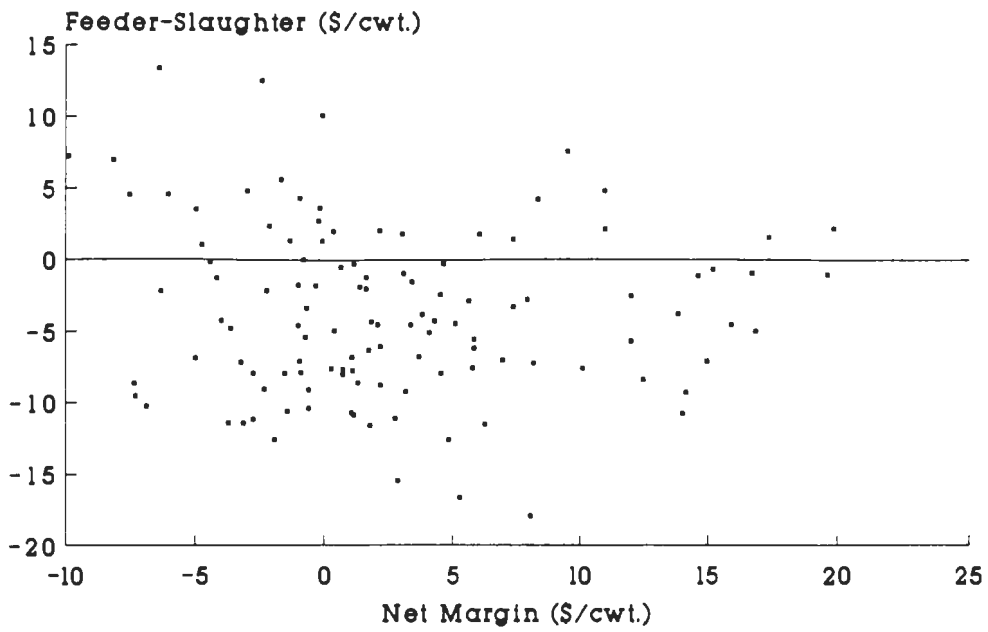


Figure 7. Margins Above Feed and Feeder  
Costs, Midpoint of Distant Futures Vs.  
Feeder/Slaughter Price Differences

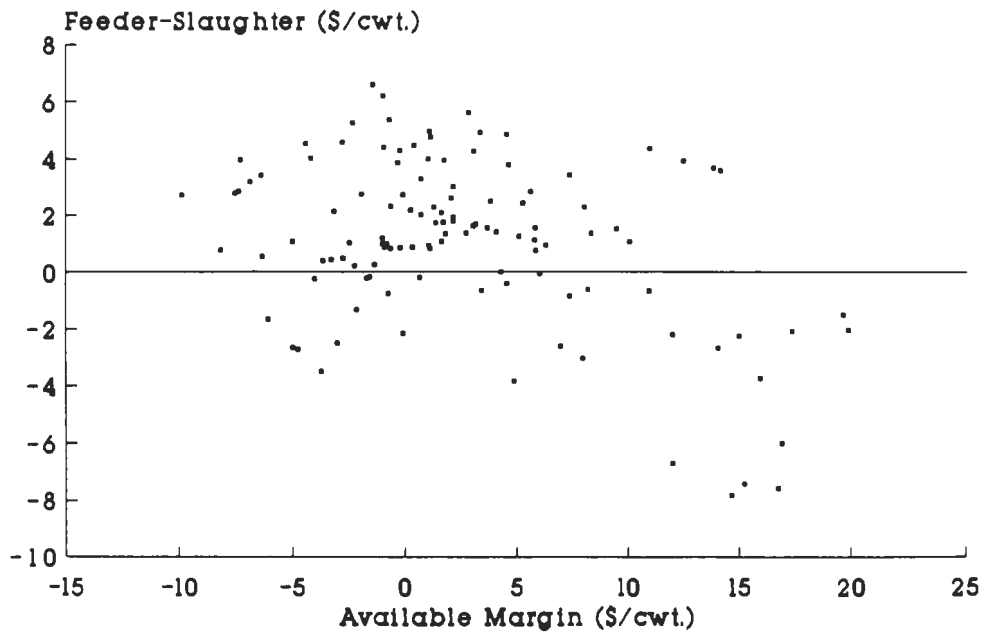


Figure 8. Margin Over Feed, Feeder Cattle Costs Vs. Feeder Cattle Prices, Great Plains Feeding Area, 1980-89

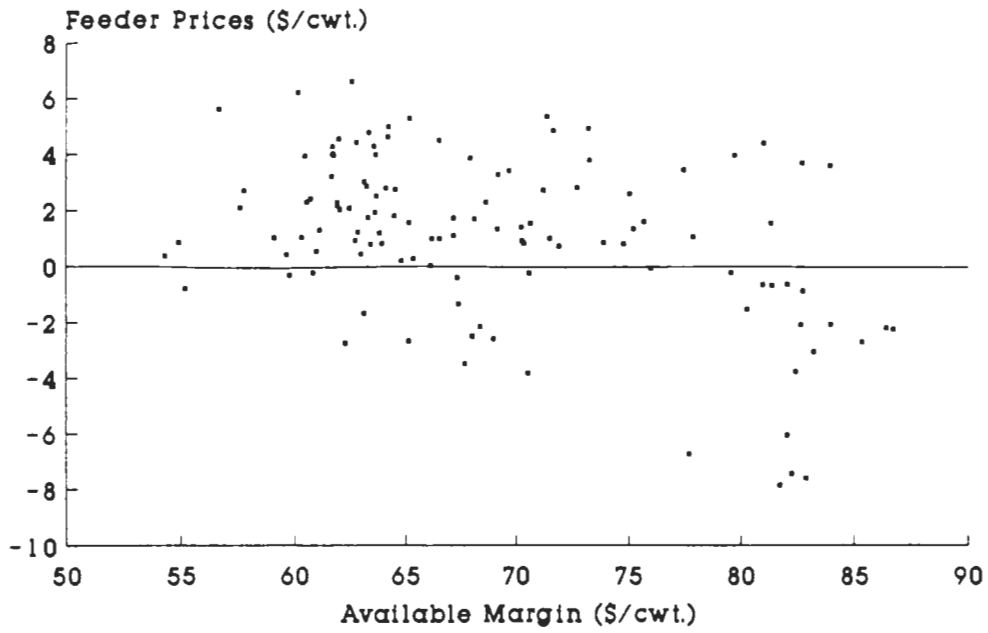
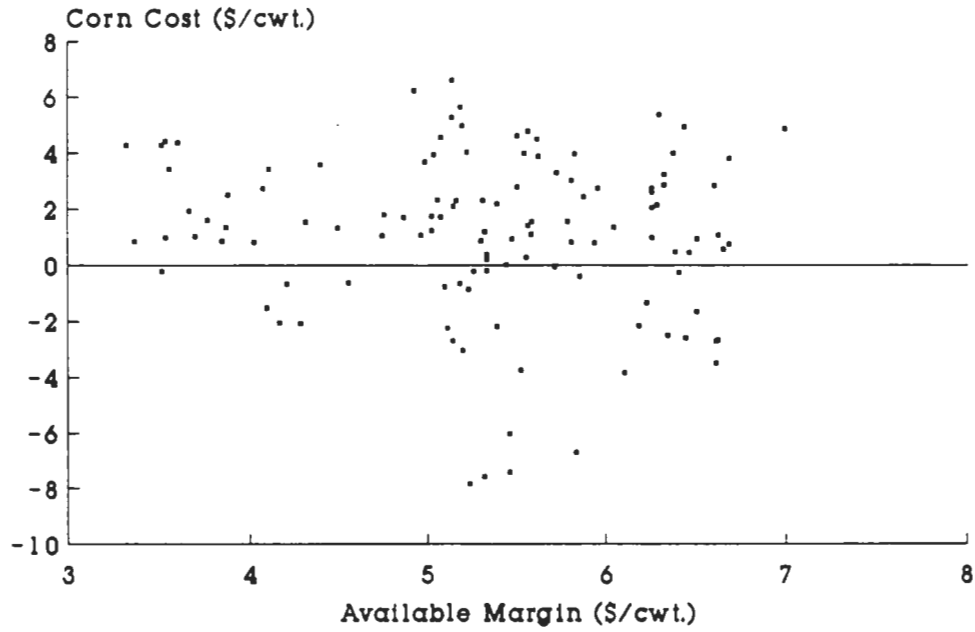


Figure 9. Margin Over Feed, Feeder Cattle Costs Vs. Corn Costs, Great Plains Feeding Area, 1980-89



## *Implications to Market Efficiency*

An efficient market is a market that discovers a price that reflects all the available supply-demand information. There is vast literature in the area, and "levels" of efficiency have been defined by researchers (Fama). A review of that literature is not necessary here. What is needed is a reflection of the possible importance of who is trading the futures, and in particular, the implications of blocking access to the trader who may have information that is timely, accurate, and often proprietary in nature.

Cattle feeders are in daily contact with the cash feeder cattle market, are aware of corn prices, and most have detailed and sophisticated computerized analyses of costs (variable and fixed) and projected breakeven prices for the finished steer. Much of this information, especially the cost information, is available to only a limited number of people. If cattle feeders are not willing to enter the market short the nearby feeder cattle futures and long the distant live cattle futures due to concerns over tax treatment of what would be seen by the IRS as speculative trades, the market may be denied access to high-quality and relevant information.

Reference to Figure 3 suggests the markets are relatively inefficient in correcting a disequilibrium situation. Conceptually, the markets would be expected to offer margins that cover variable costs most of the time. There are issues of asset fixity and there is a biological process involved in feeding cattle that influences the length of the feeding period. There is no rationale to placing cattle when forward pricing opportunities are well below prices needed to cover feed and feeder cattle costs. Any negative margins relative to variable costs should therefore be short lived and quickly corrected, but that is not the case. There is a string of 14 consecutive months during which the margins were negative in 1988 and 1989, which means the feed and feeder cattle costs could not be covered. Nineteen of the last 21 observations are negative, with the magnitudes ranging up to  $-\$8.00$  per hundredweight. Either feedlot operators feel they are blocked from entering the market to help correct the imbalances or there are wildly optimistic outlooks for fed cattle prices and the feedlots are willing to be cash market speculators and hope for higher prices. Conceding there could be an element of this involved, an imbalance that persists across several months suggests little or no influence from cattle feeders in discovering feeder cattle and live cattle prices.<sup>3</sup>

A portrayal of the possible policy issue is provided in Figure 10. The net margins offered above all costs of highly efficient producers are assumed to be around zero over time. The moves to positive levels (A to B) may be less sustained than periodic moves to negative levels (B to E). There is a possible social loss associated with any policy position, such as the IRS position, that tends to prolong the moves to negative margins and/or accentuate price moves. That loss could take the form of a more variable supply of beef products at higher average prices than might be the case of the market imbalances were corrected more quickly.

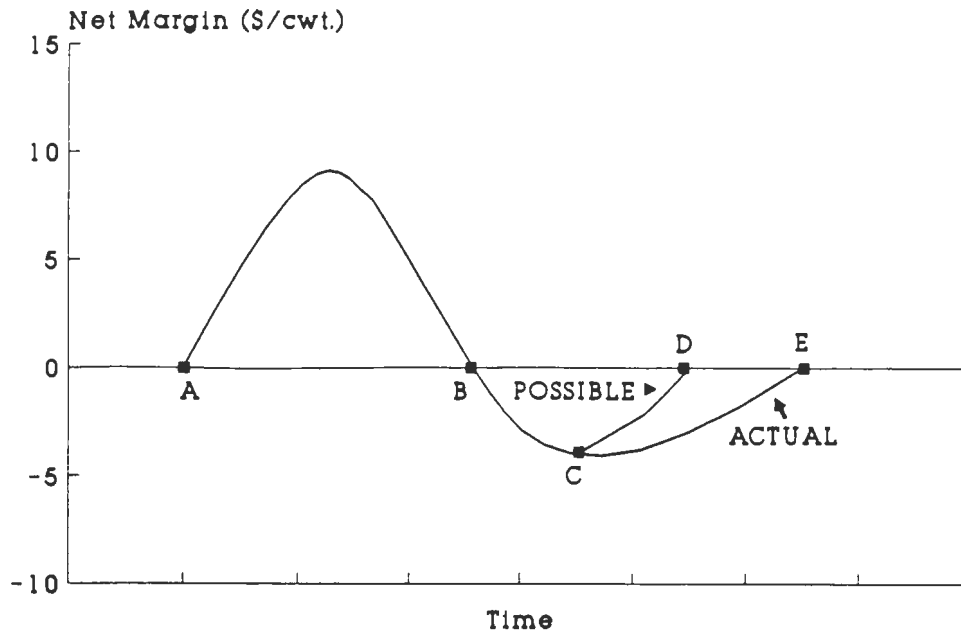
If the markets were equally effective in correcting the imbalance associated with losses (negative margins) as in correcting the imbalance associated with excessive profits or economic rent when all costs are considered (positive margins), any social loss could be avoided or reduced. In Figure 10, that loss is characterized by the area CDE. The losses cannot be measured in the figure, of course. The losses take the form of excessive variation in fed cattle supplies and prices as cattle feeders seek to address market imbalances indirectly by changing placement patterns, a correction that requires more time than might be the case by dealing directly in the futures markets.

Figure 11 shows the type of margin recorded in Figure 3 from January, 1980 through June of 1989 in the top half of the graph. The bottom half shows the monthly placements of cattle in the 7 major feeding states as a percentage change from year-earlier levels. Feeders reacted to the negative

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<sup>3</sup> During 1987-89, the U.S. cattle herd had dropped below 100 million head, and calf prices have been relatively high. There has been some fledgling demand for heifers for breeding purposes, but no sustained herd building had developed as of January 1, 1990. Feeder cattle prices have been boosted by these supply-side influences, but there have been parallel reductions in per capita beef supplies which should boost fed cattle prices and live cattle futures. A logical inference is that the dominant importance of derived demand for feeder cattle has not been effectively and efficiently incorporated into the discovered prices for feeder cattle and/or fed cattle via live cattle futures.

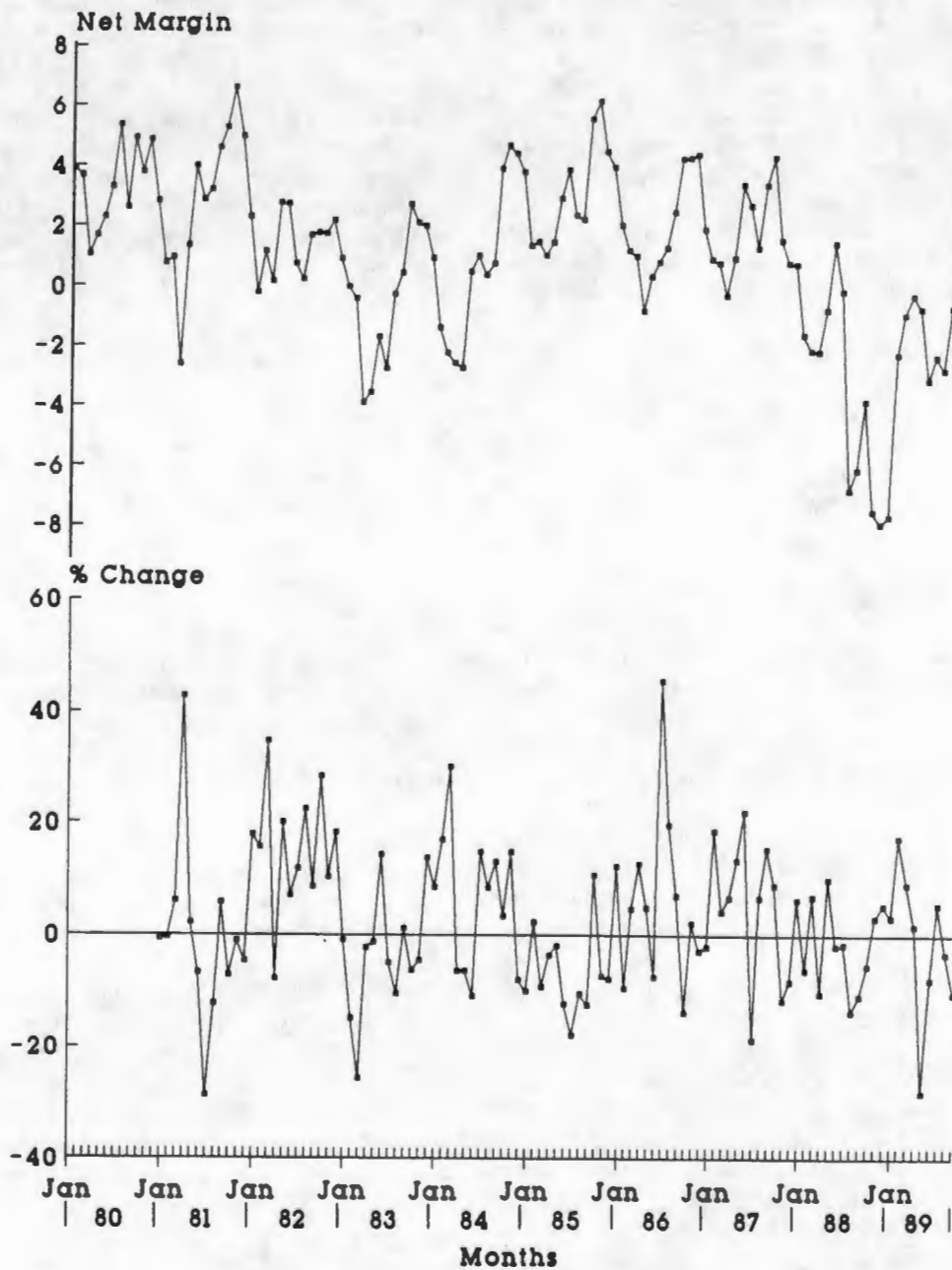
Figure 10. A Conceptualization of Actual Vs. Possible Market Performance Patterns



margins in 1988 by reducing placements in the last half of the year, a logical response. But it took many months for the markets to reflect the impact (there were 5 consecutive cattle-on-feed reports with placements below year-earlier levels) and it was late 1989 before the margin being offered was positive again. As the lower placements reduced the on-feed count and the projected fed cattle marketings, cash prices for fed cattle moved higher. Prices pushed up to \$80 in late 1989 from a low around \$70 earlier in the year and reached \$80 again in early 1990. The February 1990 7-state cattle on feed report revealed that the on-feed count had climbed to 7 percent above 1989 levels as cattle feeders responded to the strong fed cattle market. Following the report, the June 1990 live cattle futures dropped to the \$70 level, and it appears the process of absorbing losses and/or the absence of positive margin opportunities is starting all over again. By effectively denying cattle feeders the opportunity to deal with the imbalances directly via positions in the futures markets, the corrections are delayed until there is increasing recognition that the placements of cattle on feed have changed. Even then, the corrections in the futures are made primarily by traders in futures from outside the cattle feeding complex.

The imbalances would be seen by some analysts as evidence of inefficient markets, and some readers would suggest the arguments being made here are that the markets are inefficient. But that view is too narrow and too restrictive. The efficiency of the feeder cattle and live cattle futures market is closely related to the quality of the information base and the effectiveness of the traders as prices are being discovered. What is being argued here is that policies which block participation of well-informed participants (feedlot owners/managers) in efforts to correct imbalances between feeder cattle and live cattle futures will constrain the effectiveness of the price discovery process and generate pricing patterns and market behavior that will appear to be evidence of market inefficiency. In turning to a discussion of research needs, this position must be kept in mind.

Figure 11. Net Margins in Relationship to Year-to-Year Changes in Cattle Placements



**Research Needs**

The overall need is a measure of the social costs that accrue from a more variable cattle/beef sector than might be the case if the IRS policy were to be changed. But such an aggregate measure will be difficult to impossible to achieve until more specific and complementary needs are addressed.

## **Quality of Information**

It has been hypothesized that blocking cattle feeders' access to the futures markets interferes with the effective and efficient workings of the feeder cattle and live cattle futures markets. Implicit in that position is the assumption that cattle feeders have access, via their ongoing and daily activities, to better (more timely, more accurate, more specific, etc.) information on costs of cattle feeding and the related opportunities being presented by the markets. That assumption is intuitively appealing, but may not be correct.

Research is needed to measure the differential impact on price discovery processes in the cattle futures markets of broad versus specific measures of feeding costs. The USDA publishes a monthly series on feeding costs, and some private services and extension personnel monitor estimated feeding costs relative to fed cattle prices. The publicly available series are often weekly or monthly, however, and reflect some average conversion rate for average cattle under average feedlot conditions. Obviously, cattle feeders will have more specificity in the information they have at their disposal and that information is available without time lags.

Research is needed to compare and contrast the information that is being widely employed in discovering prices for cattle futures with that accessible to cattle feeders. A distribution of costs for different types of cattle in different feedlot conditions could be compared to selected averages in more widely available series, and any significant differences could be converted to price equivalents in feeder cattle and/or live cattle futures. To the extent there are significant differences, an implicit measure of the marginal value of information held by feedlot operators could be generated.

## **Length of Response Lags**

Closely related to the issue of quality of information is the issue of length of response lags. How much time is required is a function of (1) the time intervals in publication and the time lag between collection and receipt by traders, and (2) the perceived accuracy and integrity of the information. The first is strictly time related. Information cannot exert influence on the markets until it is received by current and potential participants in the markets.

The second component of time lags in response is less obvious. Traders and potential traders must decide to act on the information before it has impact, so there is a behavioral dimension to the response lag. If the information is perceived to be less than complete, not accurate, or is not viewed as highly credible, there will be a tendency to discount for the uncertainty -- and delay action.

Research is needed on the lagged response to information. Reference here is not to the periodic reports that have the potential to move the markets dramatically (Cattle on Feed reports, for example) but to the ongoing stream of regularly available information on feeding costs and price series of feeder cattle. Analysis of the direction, timing, and magnitude of changes in cattle futures prices and their relation to basic information streams is needed in a temporal context. Conceptually, information is immediately available to cattle feeders on what it takes to buy cash corn; on conversion rates by cattle types, rations, and weather patterns; and on projected finishing dates for cattle. Such information could be reflected in futures prices intraday or with a time lag of one day or less in market actions by cattle feeders.

## **Impact of Type of Trader**

It is suggested above that cattle feeders have access to superior information and are in a position to use that information without extended time delay. Both the immediate availability of the information and the high level of credibility it would be afforded would act to minimize time lags and smooth the process of moving the markets back toward equilibrium. Whether those implicit hypotheses are confirmed empirically or not, the issue of differential impact by type of trader emerges.



Futures traders are divided into large and small, and into commercial and speculative in the large category.<sup>4</sup> Generally, commercial firms are presumed to trade as hedgers and thereby reflect their business needs in the markets. Speculators, of course, are trading for profits and have no position in the cash market.

Preliminary results from an ongoing and separate analysis suggest that speculators are more inclined to ride with and push price moves than are the hedgers or commercial firms. In the context of the issues discussed here, that would suggest speculators would tend to stay long feeder cattle and/or short live cattle futures as the "feeding margin" becomes more negative for a prolonged time period. Thus, the speculative activity may be accentuating rather than correcting the market imbalances discussed herein. If this is the case, then it is more difficult to argue that arbitrage activity by current speculators will correct any and all imbalances, and that other types of traders such as feedlot owners are not needed.

If additional research confirms differential behavior across types of traders, the obstacles to cattle feeders participation has implications beyond any considerations of quality of information. Conceptually, it is logical to expect cattle feeders to quickly recognize the departure from equilibrium as feeding margins become more negative and to then establish positions that would profit from a return toward the equilibrium position--if they were to participate as speculators under current IRS policy and interpretations. They would sell nearby feeder cattle futures and buy the distant live cattle futures and such actions would (1) tend to block or mitigate moves to negative margins, and (2) decrease the length of any "string" of negative margins on a week-to-week or month-to-month basis. It would seem apparent that more research on trading behavior by type of trader would contribute to the estimation of any aggregate or social costs associated with existing IRS policies.

### *Conclusions*

The tax treatment of speculative trades in the cattle futures markets has the potential to block participation of cattle feeders in efforts to correct market imbalances and disequilibrium situations. Cattle feeders are in a position to inject the influence of very current and highly specific information on costs of feeding into trading levels for live cattle and feeder cattle futures. Statistical analysis confirms the very important role that live cattle and feeder cattle price differentials play in determining the feeding margins being offered by the futures markets.

Prolonged imbalances between feeder cattle costs and the pricing opportunities being offered cause highly variable placements of cattle and variability in fed cattle prices. Such variability imposes costs on everyone in the system, from producer to consumer.

To the extent that cattle feeders are effectively blocked from trading in futures in any capacity other than trades that meet the IRS "equal and opposite" criterion of a hedge, they are not allowed to participate in the correcting of market imbalances. Yet, the economic viability of their business investments is influenced in a significant way by those market imbalances and more active participation by cattle feeders could be important to the overall effectiveness and efficiency of trade in cattle futures.

More research to clarify the implications is needed. But if additional research confirms that the markets are more volatile and less efficient in the price discovery process than they could be, then legislative or administrative action to correct the current policies of the IRS should be considered. The current IRS policies tend to block participation of the cattle feeders in efforts to correct market imbalances, and such policies could have significant if heretofore unmeasured social costs associated with them in the form of less efficient markets and accentuated price variability.

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<sup>4</sup> The term "large" is used to refer to traders who are required to report activities to the Commodity Futures Trading Commission and refers to any trader with open positions in excess of 50 contracts for a particular commodity.

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