



CHAPTER 4

TECHNICAL ANALYSIS: THE BAR CHART

INTRODUCTION

The fundamental approach to analysis of the markets was developed in Chapter 3. In this chapter, the technical approach is examined. The fundamental approach establishes the probable direction of price trend and the general price range within which the markets are expected to trade. *The technical dimension guides the timing of pricing decisions within that price range.* To repeat an earlier observation, both approaches are important and are complementary.

Chapter 4 will deal extensively with the bar chart, the most widely used means of monitoring and analyzing price movement in the futures markets. Alternatives to the bar chart are presented in Chapter 5.

TECHNICAL ANALYSIS IN PERSPECTIVE

To gain a full appreciation of the importance of technical analysis, consider the position of a farmer who is considering hedging a growing crop. Costs of production have been carefully budgeted, and the futures market has traded up to a level that will allow a reasonable profit. The farmer acts and sells futures to hedge a significant percentage of projected production.

There is nothing wrong with locking in a price that returns a profit, via a short hedge, but there can be significant *opportunity costs* if the futures market continues to trade higher. The producer is denied the benefits of any still higher prices that develop. By comparison, consider the position of another farmer who monitors the forward prices being offered by the futures market and recognizes that a profit is being offered. But the second farmer can “read” the futures price charts and sees that the market is in a strong uptrend—with still higher prices likely to come. Selling futures in this situation is likely to bring significant margin calls, and with it comes the loss of

an opportunity to set prices at still higher levels. Herein lies the much-discussed opportunity cost to the hedger who pays no attention to the technical dimensions of the market. *Prices may be pegged at levels that turn out to be much lower than might have been possible because there is no recognition that prices are trending higher within a price range that is still consistent with the underlying supply–demand fundamentals.*

There is a parallel that might be even more important. Consider the situation in which the pricing opportunities offered by the futures markets are never high enough to cover costs. The producer who waits to price on a “target price” basis, with the target above budgeted costs, may be caught without any price protection if the markets fail to reach the target level and then move sharply lower. The producer who monitors the technical dimensions of the markets sees an important sell signal develop on the charts and moves aggressively to get protection to prevent financially ruinous losses even though the price established by the hedge is below costs.

The technical aspects of the market are much like a road map. They can give direction, and they can keep the decision maker from getting hurt by a lack of perspective in terms of where the market has been and where it might be going. Coverage in this chapter is dedicated to providing the potential user of the futures markets with a “road map” and contributing to the much-needed perspective in terms of where the markets have been and where they are likely to go. The techniques are simple and easy to use and offer tremendous potential for the serious student of the markets. They are not a panacea, but they *will* help in efforts to effectively manage exposure to price risk.

Technical analysis brings an additional set of tools to the decision maker. Disciplined use of the technical dimensions of the market can help the producer avoid the frustrations of margin calls and the significant opportunity costs in a pricing program and can provide a “safety net” against potentially ruinous price moves. The ability to analyze the charts is important to decisions on whether protection should be established and to the correct timing of pricing actions.

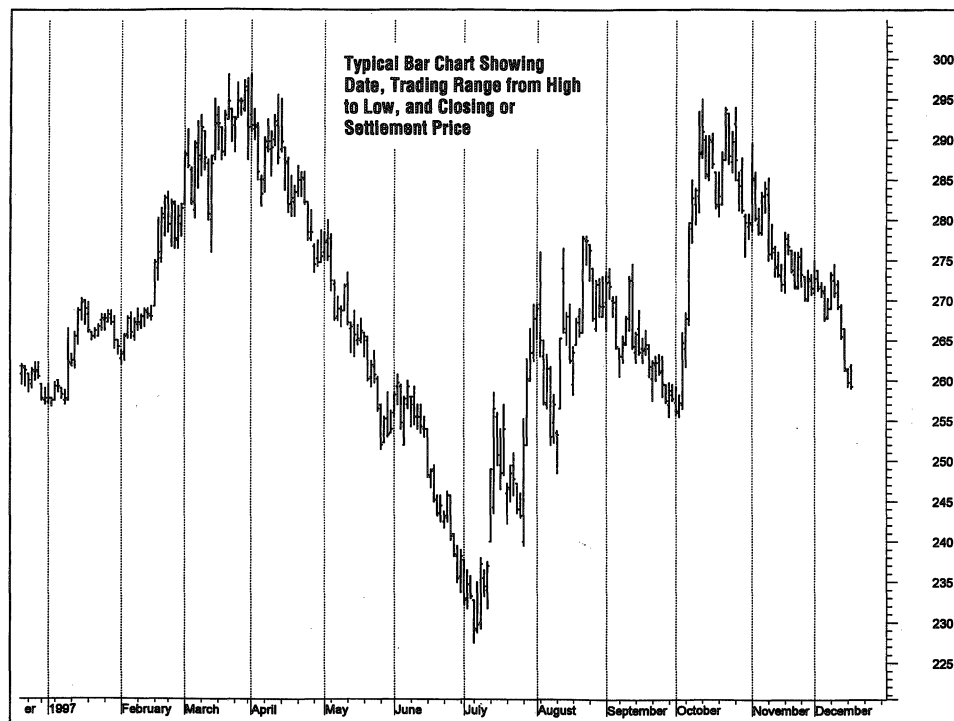
THE BAR CHART

There are numerous ways to record, in a technical context, the actions of the futures markets. The most widely used is the *bar chart*. Figure 4.1 illustrates.

On the vertical axis, the bar chart shows a price scale. On the horizontal axis, the chart shows a time calendar typically spanning six months or longer. The chart shows the price action for each trading day. The vertical bar shows the trading range (the high price to the low price) and the horizontal “tic” shows the closing or settlement price. The charts can be updated daily. Most major newspapers show the high, low, and closing price for the important agricultural commodities and financial instruments. A number of national-level firms offer electronic services via FM or satellite transmission that bring the price information directly to the user and offer automatic updating of the bar charts.

A number of widely used bar chart patterns can be used to interpret and predict the price action. Most of the techniques had their origin in the stock markets and have been adapted to the commodity futures markets. As the discussion of the various charting patterns develops, references will be made to the reliability of the various

FIGURE 4.1
A Typical Bar Chart
Format for a Commodity
Futures Contract



“signals” being generated. Specific levels of reliability are difficult to document. There have been attempts by some analysts and researchers to go back through historical charts and generate frequency counts on the number of times a major price move down, for example, followed a “sell signal” that is identified on the charts. In this chapter, calling a particular chart formation a reliable signal or offering more specific indications of reliability is based on awareness of efforts of other analysts and on 25 years of working with and observing the markets.

Trend Lines

Perhaps the most important single tool in technical analysis of the price charts is the simple trend line. Figure 4.2 illustrates with a sketch for an upward-trending market.

When the underlying supply–demand balance is strong enough to generate higher prices, the chart will show an uptrend. In the context of technical analysis, this can be shown by connecting two or more lows in the daily price ranges. Preferably, these lows will be 10 or more trading days apart and the trend line will not be extremely steep.¹ As long as the supply–demand situation is interpreted as sufficiently strong to justify higher prices, the uptrend will remain intact. It is when the

¹On most commercial charts, the line should not be much steeper than 45 degrees. Obviously, this is a function of the price scale on the chart. The idea is to avoid trying to use trend lines on the short-term, day-to-day variability that characterizes the commodity markets and to isolate the major or more nearly long-term trends that have developed or are developing.



FIGURE 4.2
Illustration of an
Uptrend Line Drawn
across Two Daily Price
Lows

market falters and a close below the trend line is observed that the chart patterns are signaling a change in price direction. The technical pattern is registering an emerging consensus of the supply–demand balance that higher prices can no longer be justified at this point in time.

The sell signal² generated by the close below the trend line becomes, to an extent, a self-fulfilling prophecy. All technical analysts, hedgers and speculators, see the same sell signal and are inclined to establish short positions in the market. The concerted action tends to turn the price direction down, at least temporarily.

This does *not* mean that the technicians who trade, based on chart patterns, dominate the markets. *The close below the uptrend line occurs because the consensus of traders' interpretations of the supply–demand balance, based on the available information, is that still higher prices cannot be justified.* If the supply–demand balance is strong enough to justify higher prices, a sell signal generated by the close below the trend line will be ignored and higher prices will emerge. But that scenario is unusual. *An emerging consensus that prices will not move higher is what gener-*

²Exactly how and when the market should be sold in response to the sell signal will be covered in detail later in the chapter. There are specific types of orders that can be placed with the broker to sell or “go short” when the daily price range penetrates the trend line or when the close or settlement price is below the trend line. The various orders will be explained as the discussion progresses. The need here is simply to recognize that the close below the trend line is signaling a reversal of the price trend. But it is time for you to start getting familiar with the types of orders explained and demonstrated in Appendix 4A. Refer back to this appendix if needed as the discussions in this chapter progress.

FIGURE 4.3
Illustration of a
Downtrend Line Drawn
across Two Daily Price
Highs



ates the close below the trend line. Prices are therefore likely to move lower in search of a more nearly correct market-clearing or equilibrium price given the available information base.

A parallel exists in downward-trending markets. Downtrend lines are formed by connecting two highs, and a close above the trend line is widely seen as a buy signal. The consensus of the traders is that still lower prices are not justified and the direction of the price trend turns to positive and prices start to move up. Figure 4.3 demonstrates a downtrend line. *The close above the line is a widely recognized buy signal.*

How the trend lines are employed in a market plan depends on whether the hedger is a selective hedger or a conservative hedger. In earlier chapters, the two approaches were introduced and discussed. Selective hedgers will opt to *select* the periods in which they are hedged. A break of an uptrend line will signal the placing of a short hedge. Later, if a downtrend line is broken and a buy signal is generated, the short hedge will be lifted. *Producers of a crop or livestock or holders of inventories are thus selecting periods when they want price protection versus periods when they are willing to be cash market speculators.* They are attempting to *manage* their exposure to cash-price risk.³ For the long

³The preference for such a strategy will vary across producers. Some will seek the occasional high cash prices that accrue to cash market speculators because they are risk takers and are motivated to go after those high prices. Such producers may never use futures or cash contracts to establish prices. At the other extreme, some producers will prefer to establish the hedge and keep it in place because they are not interested in trying to manage selective hedging programs. The selective hedger falls between the two extremes.

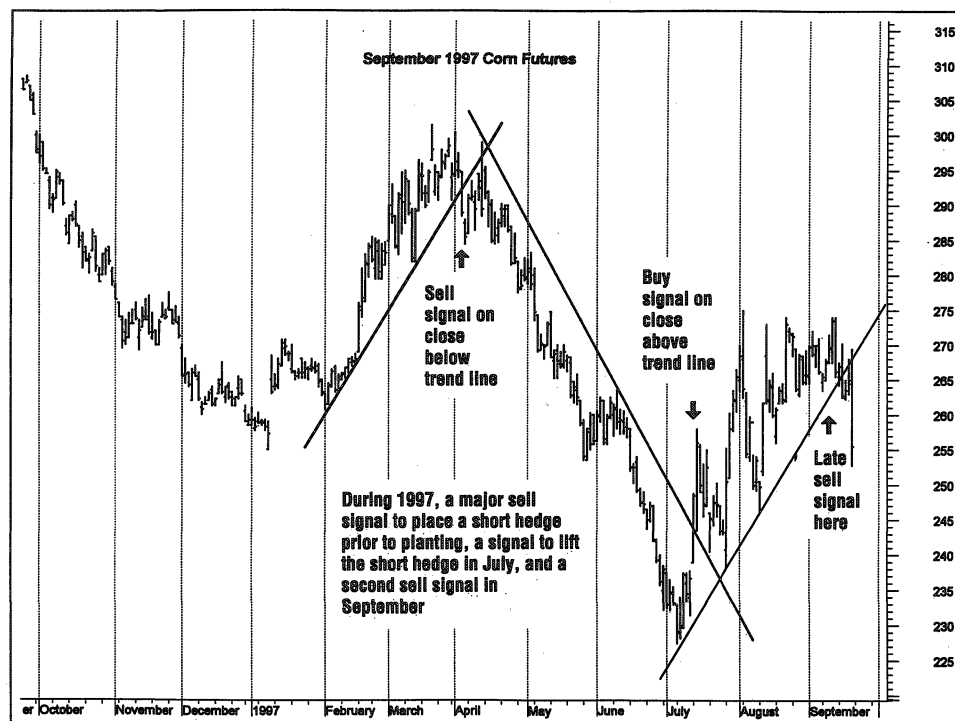


FIGURE 4.4
Illustration of Trends and
Related Chart Signals in
a Selective Hedging
Program

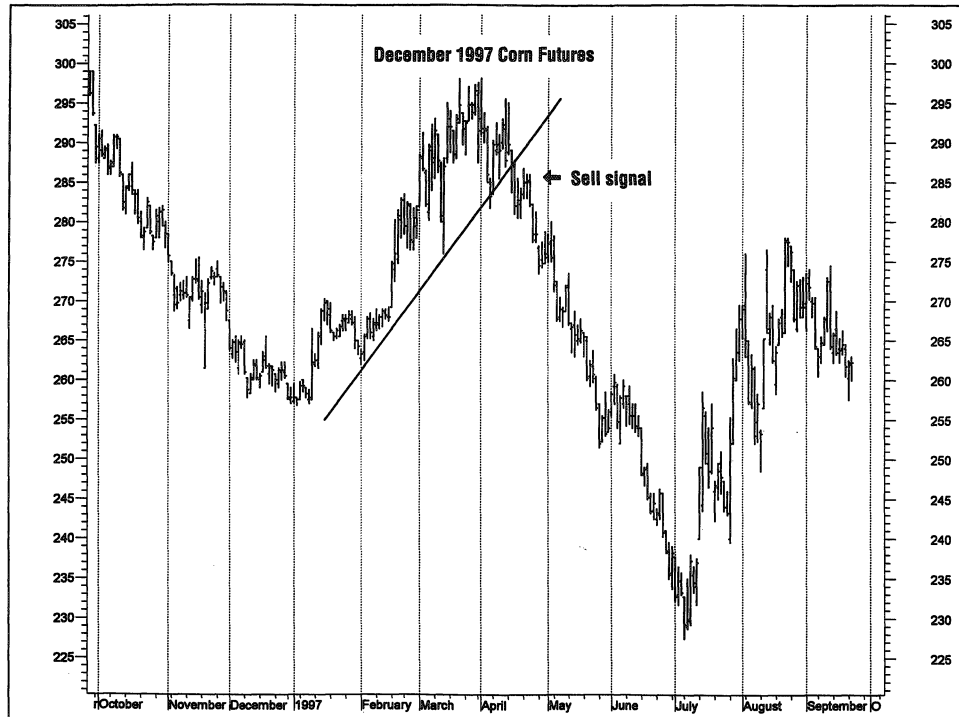
hedger,⁴ of course, the actions are reversed. The hedge is placed on buy signals and lifted on sell signals generated by closes that penetrate the trend lines on the charts.

Conservative hedgers, on the other hand, do not lift the short hedge by buying back the futures positions when the price trend (based on the trend lines) turns back up. If prices move back above the level at which the short hedge was placed, they answer the margin calls and keep the hedge in place.

In markets in which major trends are prevalent, the trend line can be a powerful analytical tool. Figure 4.4 demonstrates, using a demonstrative chart pattern that exhibits several major trends. You should study the chart pattern in Figure 4.4 and think about precisely what is occurring. During the periods when prices are moving lower, a selective hedging program will have short hedges in place. When the buy signals are generated by moves up through the downtrend lines, the short hedges are offset by buying them back. Thus, the selective hedger is either short in the market and hedged or is out of the futures market and operating as a cash market speculator. *The selective short hedger is never long in futures.* For the producers of commodities or the holder of inventories, being long in the cash commodity and buying futures would mean they are speculators in both the cash and futures markets. The risk exposure is

⁴The long hedger, remember, is looking for protection against rising prices of an input or a raw material. For example, the firm engaged in buying and crushing soybeans will be interested in protection against higher prices of soybeans, its primary raw material. The long hedge will be demonstrated later in the chapter.

FIGURE 4.5
Demonstration of a
Trend Line and Sell
Signal on the December
1997 Corn Chart



tremendous if the markets turn lower. The selective short hedger should never, therefore, be long in the futures markets.

Figure 4.5 demonstrates application of a trend line for corn. The December 1997 corn chart (CBOT) was showing prices trending higher in the early months of 1997. Stocks in the U.S. and at the world level were relatively tight, with the estimated ending stocks for the 1996–97 crop year in the U.S. in the 1.2-billion-bushel area. In Chapter 3, the relationship between ending stocks as a percent of use and prices was analyzed and developed. That framework and the overall supply–demand balance were suggesting higher prices, and the market moved higher.

During February and March, the market started to react to changes in the supply–demand situation. Stocks at the world level were, in fact, being pulled lower by usage that exceeded production, but stocks were not moving toward dangerously low levels. That perspective, in combination with improving crop prospects from an expected large planted acreage in the U.S., started to have its influence. The direction of price trend changed during April as a close below the trend line signaled a major switch in the consensus of traders in the corn markets.

The sell signal that occurred during April was important to both the conservative and the selective hedger. As a conservative hedger, the producer's primary need was to decide how much of the projected crop to hedge. The need to get price protection established should be clear with the change in price direction. The typical reaction by conservative hedgers is to generate a very conservative estimate of production and hedge that much corn. Since the hedges are to be held until the crop is harvested, a

cautious approach is used to ensure that the volume that is hedged will not exceed actual production.⁵

The selective hedger will hedge most or all of expected production. Since the hedges will be lifted later if a buy signal is generated, there will be less concern about restricting hedge volume. In this instance, many selective hedgers would have lifted the short hedges during July. The implicit downtrend line on the chart (connect the highs in mid-April and those in early June) developed over a long time period and would be seen as legitimate by most technical analysts. If the hedges *were* lifted, the producer as a selective hedger would have replaced the short hedges in early September when a new uptrend line was penetrated and a sell signal was generated.

Not all markets show major and sustained trends and demonstrate the easily identified sell and buy signals around trend lines that could be used to guide a selective hedging program. Other technical tools must be employed to guide both the conservative and the selective hedger in short-hedge and long-hedge programs when major price trends are not apparent on the charts.

The trend line is possibly the single most important tool that can be applied to a bar chart of futures market activity. In a market characterized by sustained price trends, the sell and buy signals generated by price moves through the trend lines can be very effective guides to a price-risk management program. A close below or above a major trend line will lead to a significant price move in 70 to 80 percent of the cases, so the signals are quite reliable.

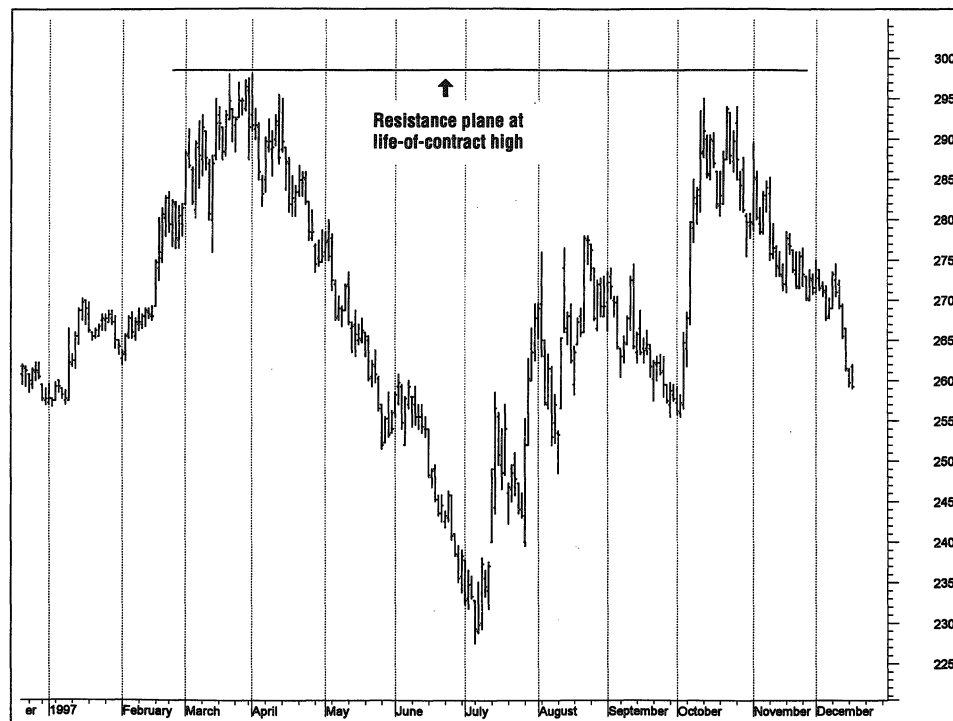
Resistance Planes

When no major trends are present, the resistance plane becomes important. Since futures markets have difficulty in going to price levels that have not been reached before, the resistance plane at life-of-contract highs can prove especially difficult for the market to penetrate. Figure 4.6 demonstrates.

As the market rallies back toward the existing contract high, it will take a significant change in consensus of the underlying supply–demand balance to generate new contract highs. Technicians and chart analysts know this, and depending on their analysis of the supply–demand balance, they will be inclined to place sell orders just below or at the old contract price high. Astute market observers and analysts may not know exactly where the orders are placed, but they will know the sell orders are there. *It is an excellent opportunity for both short hedgers and speculators to enter the market on the short side and is the type of opportunity for which disciplined hedgers and speculators will watch—and wait.* Technically oriented traders holding long positions in the market will also tend to sell the approach to the contract highs to take profits from long hedges or speculative long positions. When profit-taking actions move the “longs” to the same side of the market as the potential “shorts,” the market is highly likely to fail and turn lower. If it does not, it is clear that the consen-

⁵You should reflect on this point. If the short positions in futures exceed the level of production, then there is no gain in the cash market to offset losses in futures if the markets move higher. The loss in futures is then an out-of-pocket loss rather than an opportunity loss. Concern over this tends to make producers reluctant to hedge 100 percent of expected production.

FIGURE 4.6
Illustration of a
Resistance Plane at Life-
of-Contract Highs



sus of traders is acknowledging some new and positive thrust in the market, and new contract highs will be reached.

In Figure 4.6, the resistance plane is drawn across the life-of-contract high. Other, less important, resistance planes can be drawn across price highs recorded below the contract highs. Figure 4.7 demonstrates where such intermediate levels of resistance occur.

Note that the futures contract demonstrated in Figure 4.7 has failed at prices well below contract highs. As soon as the upward momentum falters and two or three days of lower price highs are recorded, a resistance plane can be drawn across that recent price high. If the market drifts lower and prices periodically surge for a few days, there may be several layers of resistance recorded on the chart. *It is very important to recognize that the market will have difficulty moving up through those resistance planes.* After all, the market was unable to generate higher prices last week, for example, and failed. Why should it be able to go up through that level this week? If the supply-demand balance has not changed significantly, that recent price high could turn out to be formidable resistance.

The intermediate resistance planes become pricing objectives for both the short hedger and the speculator. There will be a cluster of sell orders at or just below those planes. Awareness of this and what is happening in the market is especially important to the producer who is looking for a chance to get price protection by placing short hedges after having missed an earlier opportunity at higher prices.

In terms of management, therefore, sell orders to place short hedges should be placed just below the first resistance plane that will be encountered if prices rally. If prices move up through that plane, additional sell orders can be placed just below the next resistance plane. Repeating this process will generate any added price pro-

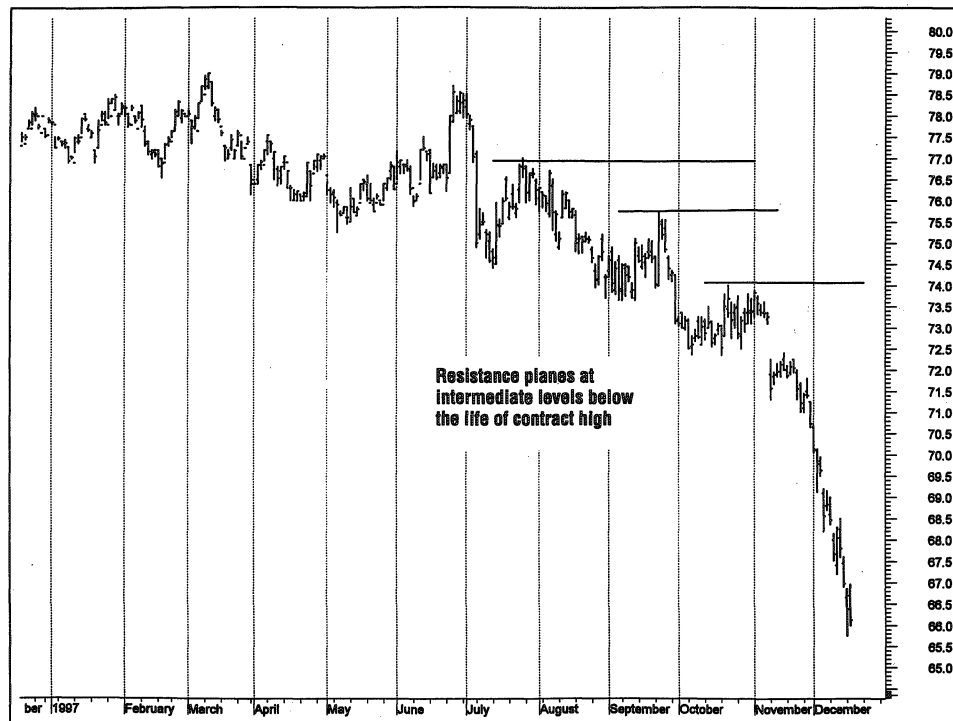


FIGURE 4.7
Illustration of Resistance
Planes at Intermediate
Levels Below the Life-of-
Contract High

tection that is needed via short hedges on a scale-up basis as the market rallies. That is, new short positions are added on a rising price scale as the market moves higher. If the hedger fits the conservative hedger mold, this will mean answering margin calls on the initial positions, but there is nothing wrong with that approach. Actually, any producer or other decision maker who plans to price on a scale-up basis should want to see a margin call on the short hedges that were placed first. The margin call means higher prices are being offered, and that is certainly desirable.

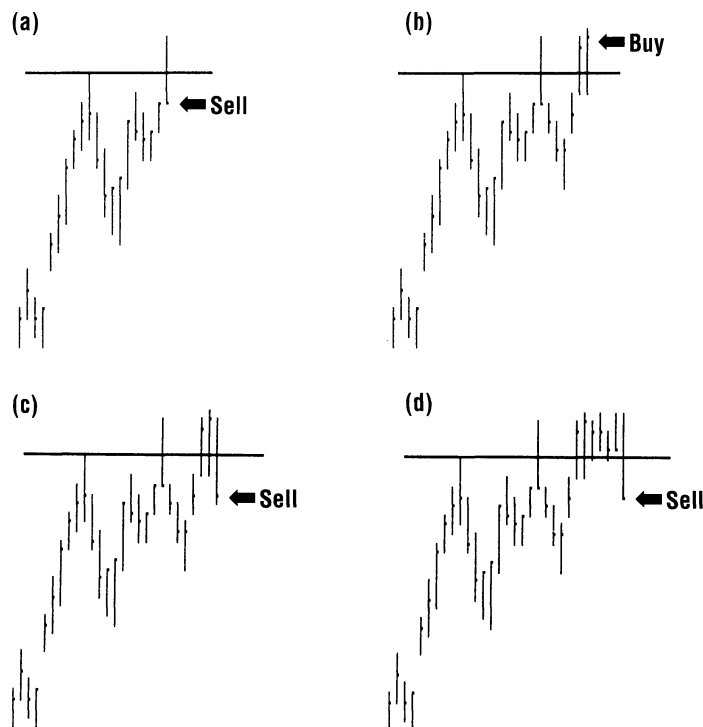
Before proceeding, it is important to explain why the sell order should be placed *below* the resistance plane. We will come back to this point later in this chapter and in later chapters, but insight is needed here.

The potential short hedger, the potential short speculator, and the holder of long positions who is interested in taking profits want to see their sell orders filled. But there are lots of traders who want the same thing—sell orders to be filled. To increase the probability that the sell order will be reached and “filled,” it is wise to drop *below* the resistance plane when placing the sell order. If there are lots of sell orders placed at and slightly below the specific price high that forms the resistance plane, the selling pressure could overwhelm the buying action—and the resistance plane might not be reached. *Dropping the sell order to prices below the plane helps ensure that the sell orders will be filled.* Suggestions on where the orders should be placed relative to the resistance plane will be included as the discussion develops for particular commodities.

The selective short hedger may opt to lift short hedges on a close above a resistance plane, viewing that penetration as tangible evidence that the underlying supply-demand balance has in fact changed and higher prices are likely. Buy orders are placed to offset the short positions in futures. When the resistance plane at life-of-contract highs is penetrated, that buy signal may be significant. It is very important that

FIGURE 4.8

Demonstration of
Possible Market Actions
at the Life-of-Contract
High Resistance Plane



the selective hedger have a plan to manage the action that occurs along the resistance plane at life-of-contract price highs, and this situation needs to be examined in detail.

Figure 4.8 demonstrates several possibilities. In panel (a), the resistance plane is penetrated, but the market does not close above the plane. The message is clear: The market has failed and prices will, in all probability, move lower. The tug-of-war on this particular day has been won by the analysts and traders who felt the supply–demand balance will no longer support higher prices. The short hedge placed on the approach to the resistance plane is likely to prove to be the correct action.

Panel (b) of Figure 4.8 demonstrates another very important possibility. The two consecutive closes above the plane suggest that the market has renewed strength, from improving demand and/or a contracting supply, and that higher prices are likely. The second of the two consecutive closes is a signal to the selective short hedger and the short speculator to lift the short positions.

This is an example of one of many moves in the markets that requires discipline. If the exchange on which the particular futures contracts are traded will accept a *buy-stop-close-only order*,⁶ the hedge can be lifted or the long hedges replaced at the close on the second day. If the exchange will not accept the close-only order, the short

⁶A buy-stop-close-only order specifies a particular price level, and the buy action will be exercised if the particular futures contract *closes* above the specified price level. The order is filled just prior to the close. Among the major exchanges trading agricultural commodities, not all of the exchanges will accept and execute the buy stop-close-only order. Talk with your broker or contact the education and/or marketing departments at the exchanges to see whether the exchange accepts the order.

hedge can be lifted on the day after the second higher close is recorded by placing a buy order with the broker. Appendix 4A explains the buy-stop-close-only order and other types of orders and discusses the advantages and disadvantages of each. Each type of order will also be explained and demonstrated as this chapter develops.

In this instance, the buy-stop-close-only order is very effective. After the first close above the old price high is recorded, the close-only order can be placed early the next day, and the short hedges are lifted if a second consecutive higher close is recorded. To illustrate, assume the old price high on December cattle futures is \$75.65. The market moves higher and closes at \$75.90. A buy-stop-close-only order can then be placed as follows:

Buy 1 December live cattle at \$75.65 stop-close only.

If a second close above the old high at \$75.65 is recorded, the short hedges will be lifted near the close in terms of time and at or near the closing price.

At some exchanges, the close-only orders are not accepted. Brokers in the trading pits do not like the order because they have to make a decision in the last minutes of trade whether the market close will trigger the order and then try to get fills. The order puts pressure on the broker, and they would prefer not to make those final-minute decisions. In such circumstances, the producer's broker could be instructed to enter the market near the close of trade, if a second consecutive closing price at new higher prices looms imminent, and offset the short hedges in that way. Alternatively, as suggested earlier, the short hedges could be lifted the day *after* the second consecutive close above the old life-of-contract high price is recorded.

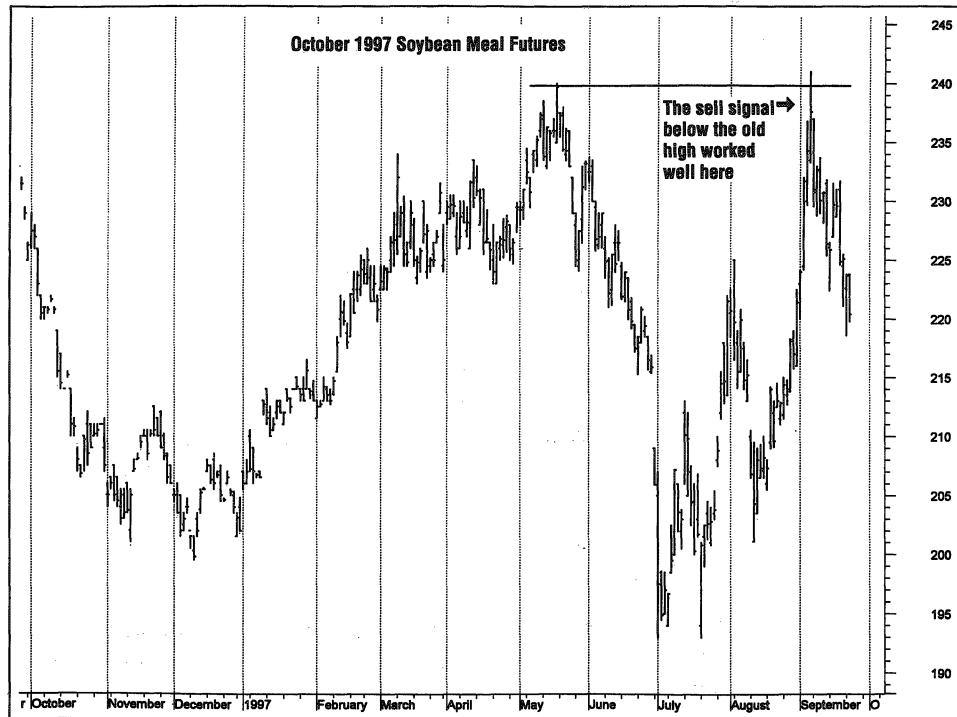
This type of action and related decisions are important. In a drought year, the new-crop December corn futures can blast through the old contract and trade up by \$1 to \$2 per bushel. In 1995 and 1996, a 1995 corn crop well below needs pushed corn prices up \$3 a bushel as the marketplace rationed usage to keep us from "running out" of corn. More extreme possibilities are present in November soybeans if drought starts to threaten the soybean crop. *Such years provide extreme illustrations of what can happen to the conservative hedger who places a short hedge and intends to just answer the margin calls if the market trades higher.* In this type of market, many short hedgers will be forced out when the credit line for margin calls is not adequate to keep the hedge in place. If this forced, margin-related liquidation occurs near the price highs for the year, the result can be ruinous for the producer—especially if the market subsequently turns lower. Thus, the willingness to buy back the short hedges when the pattern in panel (b) develops can be very important.

Panels (c) and (d) illustrate added possibilities. In panel (c), the market fails on the day after the second close at new higher prices has generated a buy signal and is ready to turn lower again. This is unlikely, but can happen. In panel (d), several days are recorded before a decisive close back below the resistance plane across the old price high is recorded. In both cases, the market failures should be a signal for the selective hedger to consider replacing the short hedge. *The price move into new contract highs is not being sustained and the market action is suggesting that lower prices are likely.*

The critic might argue that all this is too much trading. But the objective is to be positioned correctly, to be either hedged or a cash market speculator, when a consensus emerges and the market moves in one direction or the other. The key to success in these instances is to have a marketing plan and know what you are going to do for the alternative scenarios the market can present—and to follow through with

FIGURE 4.9

Market Action around the Contract High on October 1997 Soybean Meal Futures



discipline.⁷ An obvious alternative that will be preferred by some users is to adopt a conservative approach to hedging and get prepared to answer any margin calls.

The key point being made here is worth repeating for emphasis. *Unless some dramatic development in the supply-demand balance is emerging (a sustained drought, a government program to subsidize exports is announced, etc.), the odds favor a significant price decline after an approach to a life-of-contract high.* If the contract high is toward the upper end of the price range projected from fundamental analysis, the chances the life-of-contract high will “turn” prices significantly lower should be in the 70–80 percent range. Thus, the resistance plane at life-of-contract highs is an excellent place at which to place short hedges.

Figure 4.9 demonstrates the resistance plane at contract highs, and also shows how use of the markets can at times be a bit frustrating. The October 1997 soybean meal futures started a price surge in July and early August. The market had surged to \$240 back in mid-May. That high was a new contract high, and the analyst for a company holding meal in inventory decided to sell a rally back toward that important resistance plane and placed an order to sell at \$239, just below the high. Inventories had

⁷A marketing plan should involve the producer, the banker, and the broker. The objective of the plan should be worked out and provisions made for the actions that will be taken and who must approve those actions if, for example, the market starts to make new contract highs. There should also be a commitment by the bank to a credit line to answer margin calls. The role of the broker is one of understanding what is being done and executing the orders. Many banks and many brokerage firms have a standard plan or agreement that can be modified.

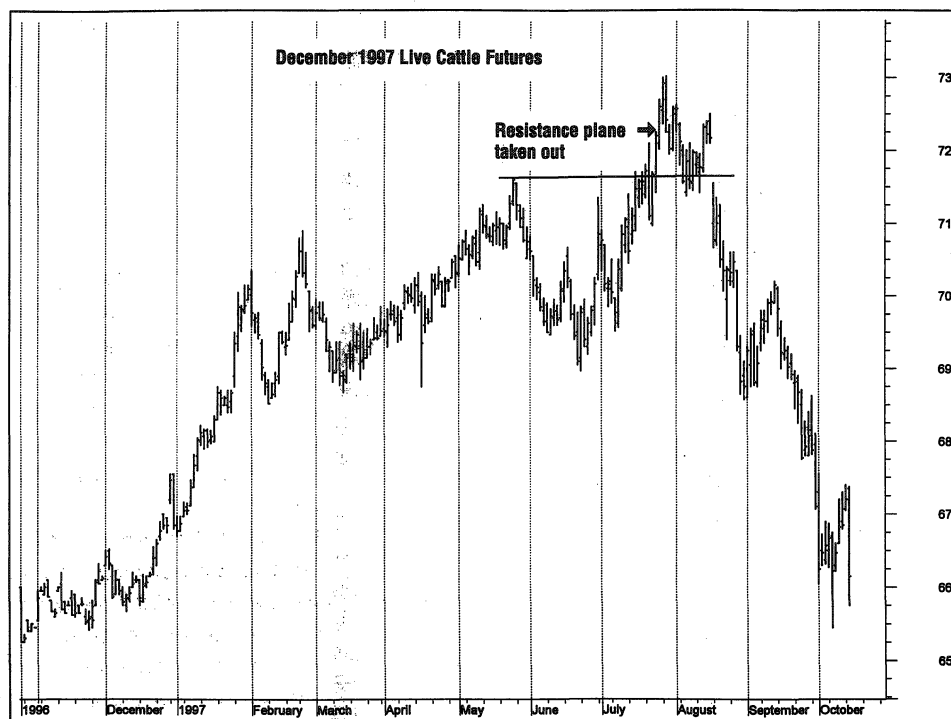


FIGURE 4.10
A Price Rally through
Resistance on the
December 1997 Live
Cattle Futures

started to accumulate as the 1997 harvest for soybeans approached, and a top management strategy meeting on September 1 generated a decision to hedge the now accumulating inventories. The order to sell at \$239 was filled on September 5, but the market pushed up to a new high of \$241. Looking back, the decision looks good, but there were some nervous moments on September 5 as the responsible analyst watched the market and its close for the day.⁸

Many analysts will ignore closes essentially equal to the old high and wait to see if the markets can show a close significantly above that old price. In this case, those higher closes never developed, and the run to the new high at \$241 was not sustained.

Figure 4.10 demonstrates a situation in which the old contract high did not stop a price advance. The December 1997 live cattle futures rallied in May to \$71.62. The market then dipped to the \$69.00 areas before starting a rally that eventually moved through the \$71.62 high and up to \$73.02 in late July. But those \$73.00 prices were not sustained. Placements of cattle into feedlots during August ran above prior expectations and started to raise the possibility of supply levels above expectations that prevailed in early July. During the July rally, hedgers and speculators holding short positions bought back those positions, especially when a new life-of-contract high was recorded in late July. Note the rapid increase in late July as holders of short positions joined those wanting to be long in buying the market. Then, when the supply expectations changed, the prices plunged again.

⁸You might ask "why nervous?" and that is a pertinent question. After all, this is a short hedge on inventories and if the futures had moved up, the firm was "covered" by the increased cash market value. But our analyst might well be on an incentive system that reflects how well he or she did in managing exposure to price risk—and that makes you nervous!

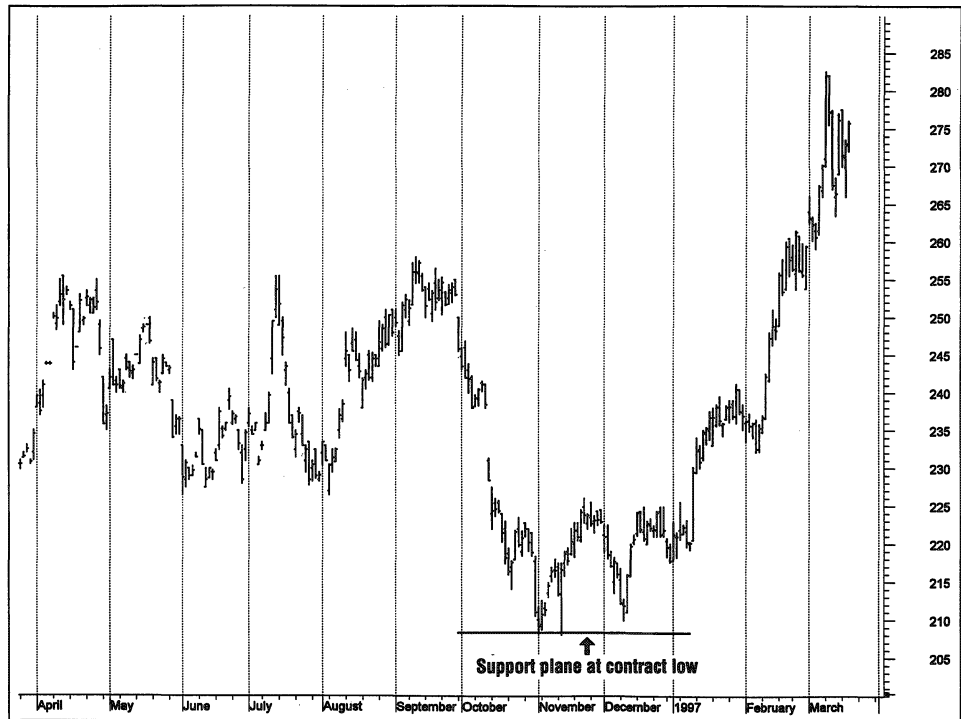
In markets that do not exhibit sustained price trends, the resistance plane can become an important guide to pricing action. The resistance at life-of-contract highs can be especially formidable and a price rally toward the contract high may offer an especially attractive forward-pricing opportunity for the potential short hedger. It is important that the decision maker have a plan of action and follow through with discipline. This is especially important when prices approach the life-of-contract high resistance plane and the market actions turn volatile around those highs as a consensus for the correct price direction is being sought. The markets will challenge you on these days, but it is worth paying attention to these often tremendous opportunities.

Support Planes

The horizontal plane across the lows recorded by past trading days is the mirror image of the resistance plane and is labeled a *support plane*. There can be intermediate planes, but the plane across the life-of-contract low is the most important support plane. Figure 4.11 demonstrates.

On an approach to a support plane, selective hedgers will place buy orders. In the case of the short hedge, the selective hedger will consider lifting or offsetting the hedge. The long hedger, as a selective hedger, will consider placing the hedge. And it is near the support plane that the conservative long hedger will also look at placing hedges.

FIGURE 4.11
Illustration of a Support
Plane at Life-of-Contract
Low



If the market drops through an intermediate support plane, the conservative long hedger should consider placing more hedges on a scale-down basis and prepare to answer margin calls if necessary. Keep in mind that the conservative hedger will not lift or offset hedges, but there is still the flexibility of placing hedges in increments. On a dip to a support plane, the conservative long hedger might cover 20 percent of raw material needs, for example. If the market moves through the plane and approaches a second and lower support plane, an added 30 percent of needs might be covered via long hedges. Such an approach will usually involve margin calls, but it generates a scale-down approach that will provide a good weighted average cost of raw materials.

The selective long hedger will consider lifting the long hedge as the support plane is penetrated and the prospect for lower prices and therefore lower costs of raw materials emerges. The selective long hedger will now be interested in being a cash market speculator. On the other side of the issue, the producer or holder of inventories, acting as a selective short hedger, will consider replacing the short hedges that were lifted or offset on an approach to the support plane if the plane is penetrated and two consecutive closes below the plane are recorded.

This all sounds complicated, but it is not. You should keep in mind that the conservative hedger wants to place short hedges on a scale-up basis or place long hedges on a scale-down basis. If the markets continue to move, margin calls are answered and more futures positions are established. The support planes simply help identify the price levels at which the conservative long hedger should consider adding to futures positions.

For selective long hedgers, the support planes show the price levels around which they should consider long hedges. The support plane at life-of-contract lows will be especially important. *Management of positions around the life-of-contract low support plane is just as important as was management of positions at the life-of-contract high resistance plane.*

The mirror image of the scenarios presented in Figure 4.8 around contract highs are presented in Figure 4.12 for support planes at life-of-contract lows. To manage the selective hedge program effectively, special attention should be paid to the two consecutive closes in panel (b). Short hedges should be replaced and long hedges lifted on the second consecutive close in new, lower-price ground. The market is signaling that lower prices, often significantly lower prices, are imminent.

Panels (c) and (d) in Figure 4.12 require management much like that discussed for Figure 4.8, but in a mirror-image context. The close back above the plane, whether it occurs on the next day, panel (c) or several days later (panel [d]), is a clear signal that lower prices are not likely. The emerging consensus on the supply-demand balance blocks the need for lower prices, and a price advance is to be expected. On the closes back above the initial support plane, any short hedges that were placed (or replaced) should be lifted again and long hedges should be put back in position. You should reflect on what is being done in each panel of Figure 4.12. It is also useful at this point to start building a perception of how much discipline will be required to manage positions consistent with the actions suggested by Figure 4.12.

Figure 4.13 uses the February 1998 pork belly futures chart to demonstrate decisions around a support plane. Companies holding bellies in stock might consider buying back short hedges on the mid-August dip to the \$68.72 late-June low. An approach to this \$68.72 support plane would also be an excellent opportunity for firms that will need bellies for processing in early 1998 to place long hedges. Both firms would like to see prices “hold” at or above the \$68.72 level, but the late-August action shows this

FIGURE 4.12

Demonstration of
Possible Market Actions
at the Life-of-Contract
Low Support Plane

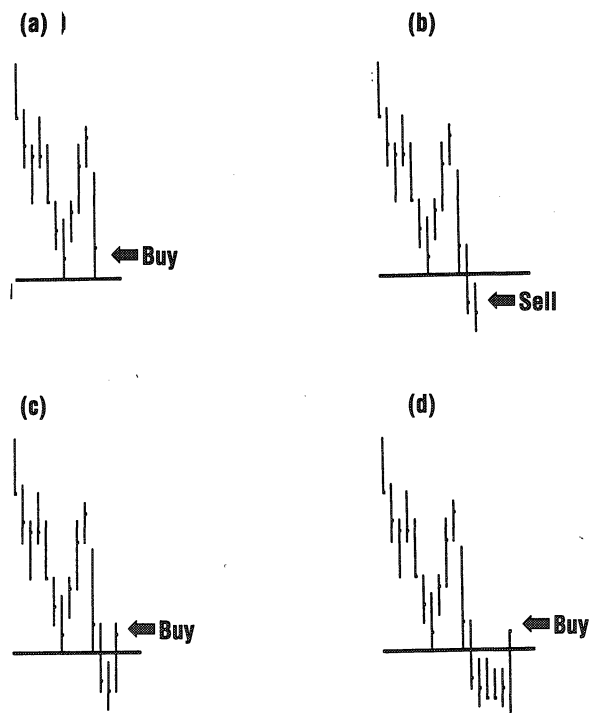


FIGURE 4.13

Demonstration of a Price
Decline through Support
on the February 1998
Pork Belly Futures



was not to be. Two consecutive closes below the \$68.72 plane signaled lower prices, but the market gave up the price ground reluctantly. One close in early September was at \$68.62, close enough to \$68.72 to make the selective short hedger who had replaced short hedges to start to feel uncomfortable. But there was never a close above \$68.72 and therefore no reason for the selective short hedger not to hold the replaced short hedges or for the selective long hedger to replace long hedges that were lifted on the break down through \$68.72.

As suggested with the resistance planes, the support plane becomes very important when the market is not showing major and sustained trends. A moment's reflection will reveal that placing a long hedge on a dip toward the plane across a life-of-contract low has a much better chance of securing prices (and costs) near the lows for the year than does the trend-line approach. As an obvious corollary, lifting short hedges on a dip toward contract lows has an excellent chance of putting the selective short hedger in a position to benefit from being a cash market speculator in the uptrending market that often develops as the market tests the contract lows and then turns higher.

The reliability of the life-of-contract low support planes parallels those of the resistance planes. The chance that prices will move higher from contract lows is in the 70–80 percent range. Obviously, the reliability of the support plane is greater when it is near the bottom end of the price range coming out of the fundamental analysis, and the importance of fundamental analysis emerges again. The support plane will be much more likely to stop the price decreases if it is (1) low in the range of recent prices given the fundamental picture, or (2) low in a historical context. Serious market analysts who do their homework in the fundamentals and watch the charts recognize the huge opportunities around the resistance and support planes. Their actions in the markets, whether as hedgers or speculators, tend to create a self-fulfilling prophecy around those planes and make them reliable guides. Keep in mind a basic point: *The futures markets will have trouble reaching new price highs or lows unless the underlying fundamentals have changed in a major way.*

The support plane becomes very important as a guide to selective action by either the short hedger or the long hedger. As was the case with the resistance plane, disciplined action is important as prices challenge the support plane at life-of-contract lows. Proper management of the market plan in the often volatile price patterns around contract lows can result in the selective hedger being “positioned” correctly as a consensus develops and a new and major price move is begun.

Double Tops, Bottoms

When the market does as expected and turns lower near the resistance plane at contract highs, a *double top* is formed. When the market turns higher after approaching a support plane at contract lows, a *double bottom* is formed. Figure 4.14 demonstrates a double top, and Figure 4.15 shows a double bottom formed along a support plane at contract lows.

The reasoning for these two formations has already been presented. If the underlying supply–demand balance has not changed significantly in terms of the consensus of market participants, the market will have trouble going into new higher or new lower price ground. The expected failure along the resistance planes at contract highs

FIGURE 4.14
A Double Top on a Bar Chart at Contract Highs

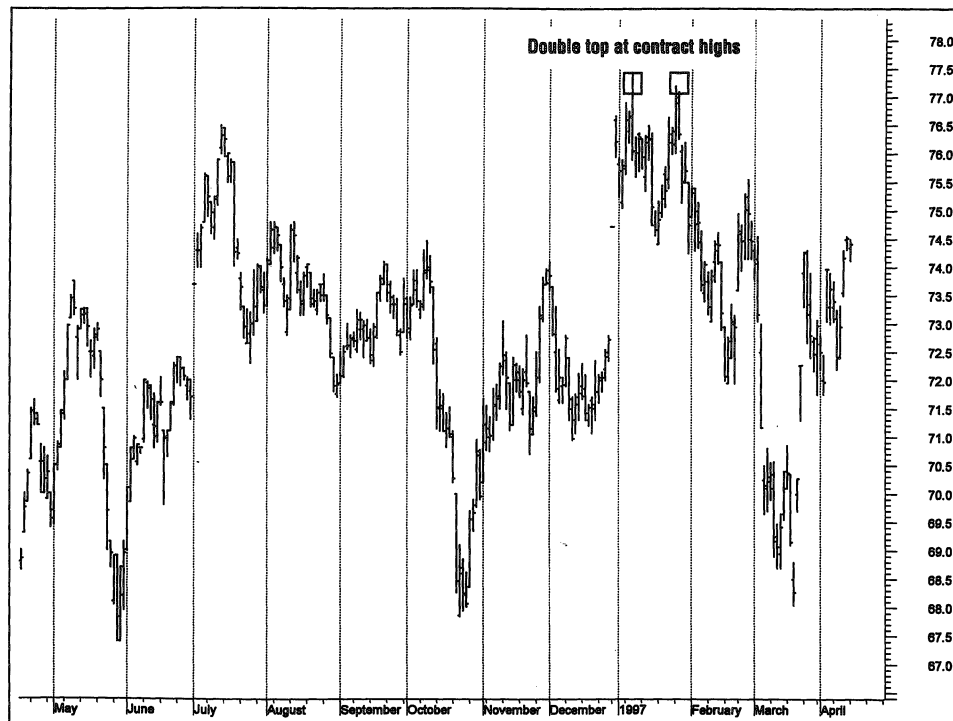
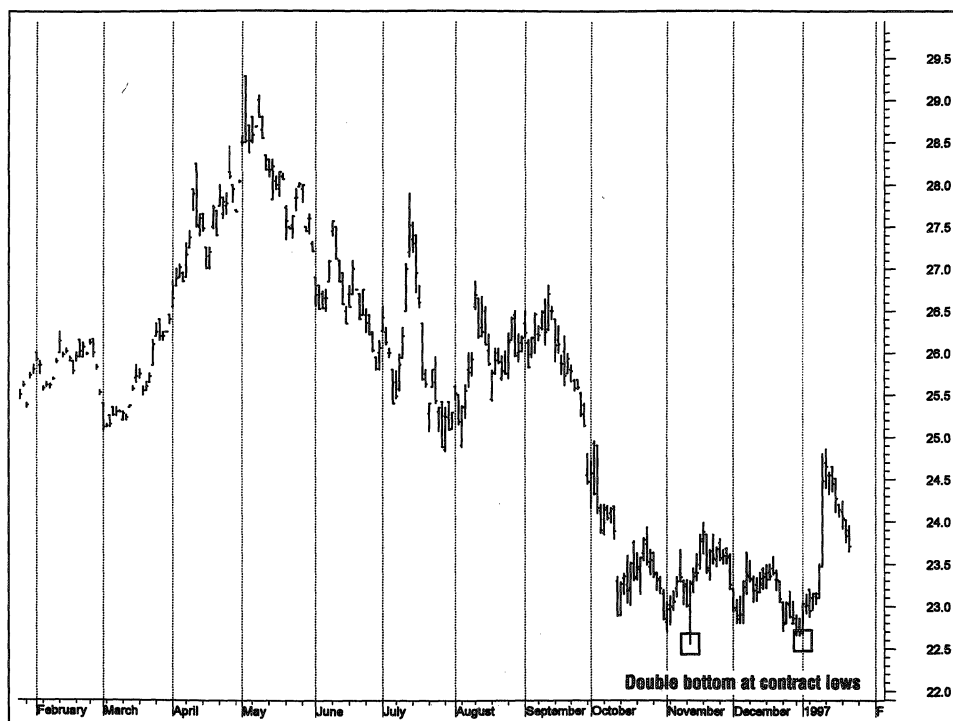


FIGURE 4.15
A Double Bottom on a Bar Chart at Contract Lows



or along the support planes at contract lows creates the double tops and double bottoms, respectively.

The question of how much time is required usually emerges with these topping and bottoming formations. In some instances, the time span can be only a few days. On other occasions, there can be weeks or possibly even months between the price rallies that form a double top or the price dips that form a double bottom.

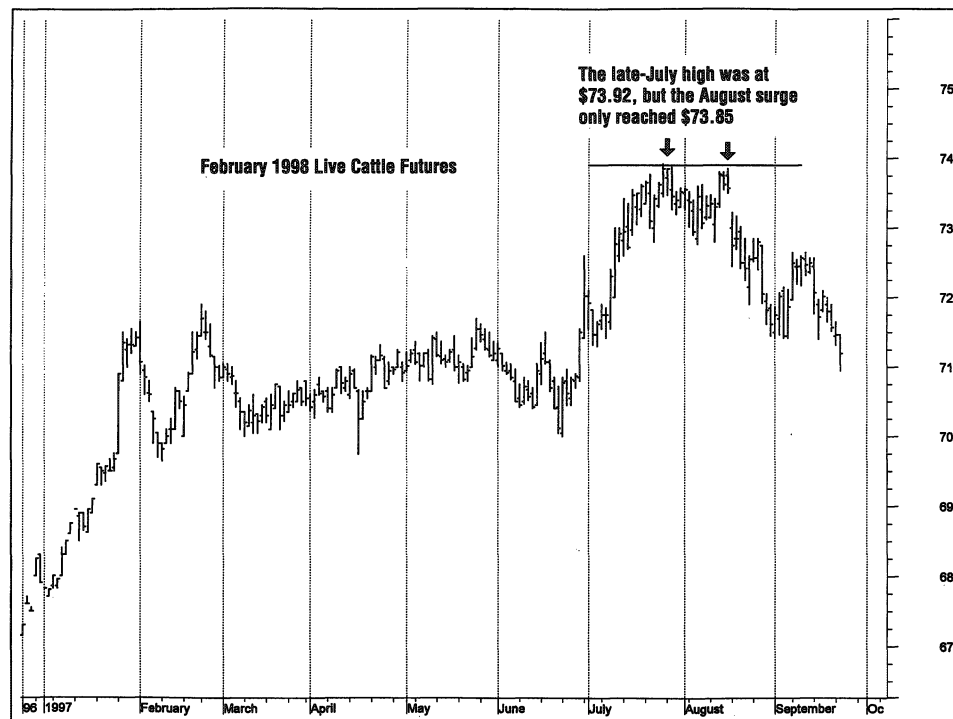
In terms of management, the sell or buy orders are placed just below the resistance plane or just above the support plane in anticipation of a double top or double bottom, respectively. When the market penetrates and closes outside the plane, the potential for a double top or double bottom is being negated, and the management strategies described for the resistance and support planes are appropriate. You should pause here and reflect again on how important it will be to have a plan—a written plan—that lays out exactly what will be done around the contract highs or contract lows.

As the potential for double tops and double bottoms starts to emerge on the charts, the question of where to place sell or buy orders again becomes very important. An approach to life-of-contract highs often presents a very attractive pricing opportunity to the short hedger, and there should be a strong desire to get a fill on any sell order that is placed. A *limit-price order*, an order that specifies a certain price level at which the potential seller is willing to go short, should be placed slightly *below* the old life-of-contract price high. As suggested earlier in the chapter, there will be a distribution of sell orders near the old price high, and the selling action associated with those orders may be enough to turn the market lower *before* the old price high is reached. *The probability of getting a fill will be greater if the market is not required to reach or exceed the old price high to fill the sell order.* This rule is generally applicable whenever the market is rallying toward a chart position that should be characterized by a cluster of sell orders. It is better to give up 2–3 cents per bushel in trying to forward-price wheat, for example, than to insist on the market matching the old high and never getting a fill on an order to sell in the presence of an excellent pricing opportunity. In the livestock futures, placing the sell order at a price \$.10–.15 per hundredweight below the contract high will help to ensure the order will be filled.

The February 1998 live cattle futures recorded a double top during July and August (Figure 4.16). The late July high at \$73.92 came at the end of a dramatic price climb. After about 14 days of drifting lower, the market surged higher to attempt a challenge of that old price high. A price of \$73.85 was reached in the next two days before the market turned sharply lower. *You can virtually see that distribution of sell orders waiting for the market to stage that last rally*, and selling pressure pushed the market quickly lower. The important point: a sell order at \$73.92 would not be filled. A sell order placed at \$73.80, just \$.12 below the \$73.92 high, would have been filled.

The double top or bottom is one of the most widely observed topping or bottoming chart patterns. These formations emerge along the life-of-contract high resistance planes or the life-of-contract low and support planes that were just discussed. To the disciplined trader, the double tops and double bottoms offer effective guidelines to the selective hedging program. Placement of orders will be important and can influence the chances of getting price protection established. In general, the orders should be placed such that the old price highs or price lows do not have to be reached or exceeded for the order to be filled.

FIGURE 4.16
Double Top on the
February 1998 Live
Cattle Futures



Head-and-Shoulders Formations

One of the most common top or bottom formation is the *head-and-shoulders formation*. Figure 4.17 demonstrates a head-and-shoulders top. The first price rally forms a “shoulder” and then the “head” is formed as the market surges to new life-of-contract highs. The second “shoulder” is formed on a rally back toward the contract highs, but the rally fails—often at about the same level of price observed in the forming of the first shoulder.

The topping action is completed when the market closes below the neckline, a line formed by connecting the lows during the price dips on each side of the head of the formation. After the close below the neckline is observed, the minimum projected price move from the point of penetration of the neckline is the vertical distance from the top of the head to the neckline. This is the distance marked “A” on the chart, and this technique for projecting the magnitude of the price move is quite accurate and reliable. Years of observation suggest the price objective is reached or exceeded in 60–70 percent of the cases.

Traders employ different approaches to managing the placing of orders for this formation. One approach is to place a sell order, using a limit-price order, as the right shoulder starts to develop in anticipation of the completion of the entire head-and-shoulders formation. This tendency helps explain why the right shoulder often forms at roughly the same price levels as the left shoulder. A *buy-stop* order can then be placed above the top of the head to limit the risk for the selective hedger or the speculator who establishes short positions as the right shoulder develops.

The buy-stop order becomes a *market order* if reached by price thrusts from below. Since a market order is filled at the first available price, the short positions

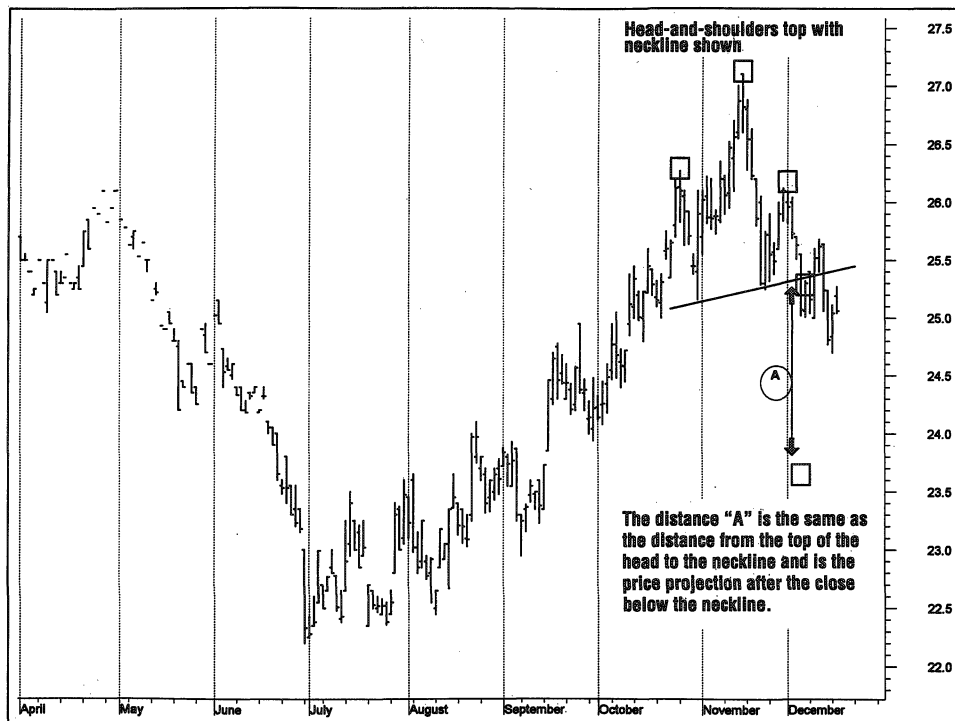


FIGURE 4.17
Illustration of a Head-
and-Shoulders Top on a
Bar Chart

would be offset and the exposure of the trader restricted accordingly. Since the top of the head is at the old life-of-contract high,⁹ the astute trader may want to watch for two consecutive closes at new higher prices before lifting a short position, or use the buy-stop-close-only order discussed earlier. Remember, this latter order will offset the short positions only if the market *closes* in new higher price ground on the second day. You might want to review the discussion surrounding Figure 4.8 at this point.

Both selective hedgers and speculators like to sell in anticipation of a completed right "shoulder" in this formation. The life-of-contract high is typically close to where the sell order can be placed, and the risk exposure can be limited by using buy-stop orders or lifting the short positions if new contract highs do emerge. The speculator, in particular, should always look for significant profit opportunities that are characterized by the possibility of limiting the risk exposure if the trade turns out to be wrong. There is a significant opportunity associated with head-and-shoulders topping formations.

A second approach, one that is less likely to be a mistake but one that will establish short positions at lower prices, is to sell on a close below the neckline. Since this formation is so frequently seen by chart watchers, whether hedgers or speculators, there will be a widespread tendency to sell on a close below the neckline. Some deterioration in perceptions of the supply-demand balance (weaker demand,

⁹It is possible to see head-and-shoulders formations at intermediate price levels, of course. Technically, we might argue they are not then "tops" or "bottoms," but that argument is not productive. If the formations develop below a very old contract high, for example, it might be a very effective chart signal.

FIGURE 4.18
Illustration of a Head-
and-Shoulders Bottom
on a Bar Chart



increased supplies) has occurred to permit the topping formation to develop, and technicians read this message from the market by observing the pricing action on the chart. Prices will often drop quickly after the topping formation is completed. Keep in mind that traders who bought the market looking for higher prices will see the same sell signal, and they tend to offset their long positions by selling in concert with short hedgers and short speculators. The selling pressure can be intense for a few days, and sharply lower prices are likely.

Figure 4.18 demonstrates a head-and-shoulders bottom. The projection technique, after a close *above* the neckline (the distance “B” on the chart), is similar to that for the head-and-shoulders top. Management alternatives are similar. Buy orders can be placed in anticipation of the right shoulder being completed, or they can be placed to buy on the close above the neckline. A buy-stop-close-only order will work here on exchanges like the Chicago Mercantile Exchange, which accepts stop-close-only orders. The order can specify a price at or just above the neckline and it will be filled only if the market closes above the neckline, thus ensuring the head-and-shoulders bottom has been completed.

It usually requires at least 10 trading days to complete a recognizable head-and-shoulders formation, with 20–30 days being more common. On the other hand, the formation can span weeks or even months of trading activity. Figure 4.19 demonstrates a head-and-shoulders topping formation on December 1997 (Chicago) wheat that required about 15 days to be completed.

The price decline far exceeded the projection from the formation. A sell-stop order below the apparent neckline would have been filled near \$4.30 in early May. The decline to \$3.35 in early July brought a price move approaching \$1.00 per bushel.

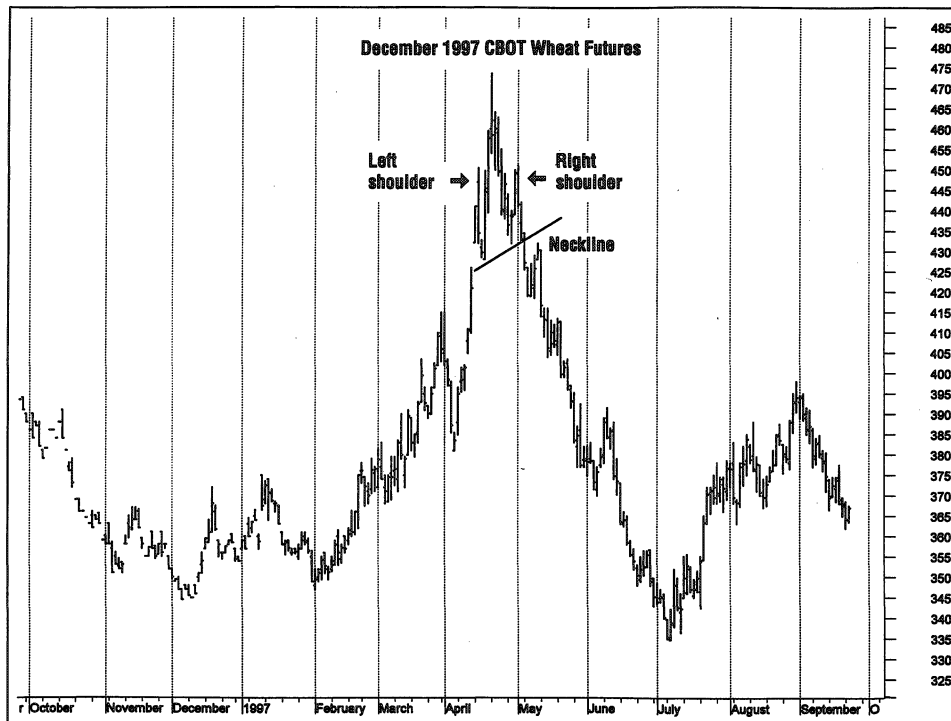


FIGURE 4.19
Illustration of a Head-
and-Shoulders Top on
December 1997 CBOT
Wheat

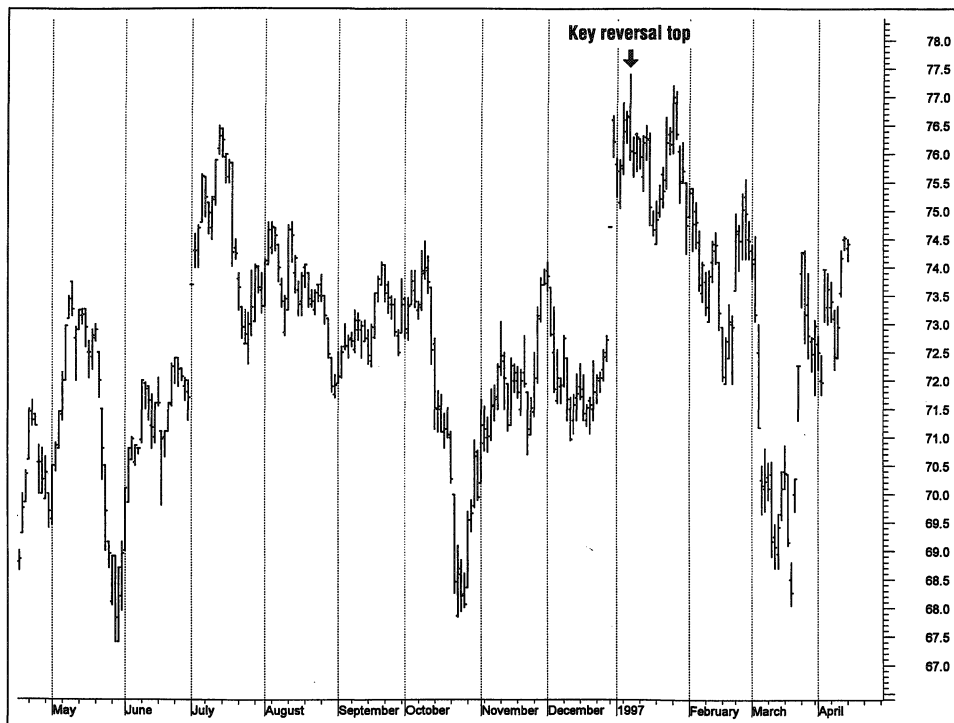
The supply-demand balance was starting to show more nearly adequate supplies in the U.S. and at the world level, and the market needed to “discover” much lower prices. The brief rally in June would have pushed up through a steep downtrend line, and a more substantial buy signal occurred in mid-July.

There are two interesting features of this particular chart. First, it shows a circumstance in which short hedges or short positions placed by a sell order in anticipation of the right shoulder would have been filled at almost exactly the level reached on the left shoulder. Near \$4.50, those levels were at least \$.20 above the level a sell-stop order under the neckline would have realized. Note the right shoulder was exactly the same “height” as the one-day rally that formed the left shoulder.

The second interesting feature is the brief price recovery after the price dropped below the neckline. This is not unusual and is evidence of the tendency of the market to make an initial correction after a buy or sell order—a sell order here—is generated. A tendency for the market to pause and “correct” before going on a sustained price move can help the disciplined trader, whether a hedger or a speculator. If you miss the sell opportunity on the break through the neckline, the market will often give a second chance a few days later at prices almost as high.

Head-and-shoulder formations are widely observed, are reliable, and offer a price projection opportunity. Typically, the price move after the completion of the formation matches or exceeds the projected price move. Hedgers should always be alert for the emergence of the early parts of the formation and be prepared to take action.

FIGURE 4.20
Demonstration of a Key-
Reversal Top on a Bar
Chart



Key Reversals

A key-reversal top, for example, must be an *outside day*, must record a new life-of-contract high, and then show a lower close. The outside-day provision simply means that the trading range for the day exceeds the trading range of the previous day—a higher “high” and a lower “low” than those of the previous day. Figure 4.20 demonstrates.

The underlying psychology of the market becomes almost visible on the day a key-reversal top is recorded. The new high signifies an ability to record higher prices, but the lower close says the higher prices cannot be sustained with the emerging consensus of the supply–demand balance. The enlarged trading range required to record an outside day suggests the tug-of-war between bullish and bearish traders waged back and forth over a significant price range.

To understand the psychology of the market during the emergence of a key-reversal top, visualize the position of the bullish traders—speculators and long hedgers—who feel higher prices are likely. They buy the market and feel good when the market surges to a new life-of-contract high. But anxiety creeps in when the market falters and then closes lower for the day. On that lower close, sell-stop or sell-stop-close-only orders may offset the long position—and the bullish traders have turned sellers. If the long positions are not offset by stop orders either prior to or at the close of trade, the traders are likely to “cover” the next day by selling to offset the long positions that are now threatening to become losing trades. The psychology of the market switches—quickly.

In terms of management, several approaches are possible. Sell orders might have been placed, using a limit-price approach, under the resistance plane across an old high that would be filled on the surge to new highs. Alternatively, the short hedger or

the speculator can wait until the lower close and the completed key reversal appears imminent and sell on the close or sell early the next trading day. In any event, fairly aggressive action is needed.

Key-reversal bottoms are also widely observed. The requirements here are the same, except a new life-of-contract low is required, and the close must be higher. Management procedures for the short hedger looking to lift a hedge, the long hedger interested in placing a long hedge, and the speculator are the mirror image of those described for the key-reversal top. Once again, relatively aggressive action is needed. A major price rally often follows a key-reversal bottom as new buyers enter the market and traders rush to offset short hedges or short speculative positions.

It is productive to introduce the notion of trading volume at this point. The topic will be covered later in the chapter, but most analysts would bring up trading volume when discussing key reversals. Trading volume is the number of contracts traded during the trading day. It is a measure of intensity. *High trading volume tends to confirm any signal being generated on the charts, and trading volume is watched closely on the days prior to and including a key-reversal day.*

Figure 4.21 shows a key-reversal top on October 1997 live cattle futures. Prices had surged during the midsummer months as the "grilling season" brought good movement of beef into consumption and the number of cattle ready to be sold out of feedlots recorded a seasonal decline. Note that the market, after hesitating for several days in mid-July, was able to move up through resistance at the May high just above \$69.50. A few days later, July 19 brought a surge to a new life-of-contract high at \$71.45 and a weak close of \$70.50, only slightly above the daily low of \$70.45. It was an outside day and showed all the requirements for a key-reversal top. The fact that



FIGURE 4.21
Key-Reversal Top on
October 1997 Live
Cattle Futures

the close was also below the *low* of the previous day will also please many analysts who are looking for a sell signal; some insist on this added confirmation. A check on the trading volume showed that 30,719 live cattle contracts were traded that day, a volume well above the levels for days both prior to and after this key-reversal day.

Obviously only one day is required for the key-reversal formation. Such a reversal pattern might be seen again within a few days or weeks. There is an intermediate key-reversal “bottom” on June 23 of the same cattle chart, only slightly more than a month prior to the topping action. Volume on June 23 was only 11,380 contracts, not a strong confirmation. The chances of a major price move after a key-reversal top or bottom is observed are in the 70–80 percent range, especially when the reversal is accompanied by high trading volume as was the case on July 29 with the top.

The key reversal is a reliable top or bottom formation, and is widely observed. As the key-reversal day runs its course, the psychological or behavioral dimension of the market is apparent. Price action in the days following a key-reversal top or bottom is often rapid and dramatic.

Hook Reversals

This formation is the same as the key reversal, but the new high or new low prices do not occur on an “outside day.” Generally considered to be a less reliable indicator of an emerging reversal in price direction than is the key reversal, the hook reversal is nonetheless an important pattern. In general, *any* chart signal generated on an outside day (as with the key reversal) is viewed as a more reliable indicator than a signal emerging on a day that does not show a wider trading range than the previous day (as with the hook reversal). Management techniques are the same as for the key reversal. Figure 4.22 demonstrates a hook-reversal topping formation on the September 1997 soybean futures. On March 11, a new high was recorded on a thrust up to \$8.03, but the market closed lower for the day. Trading volume was relatively high for the day, and increased to an unusually high level on March 12, the day after the sell signal was recorded. Prices drifted sideways to lower for several weeks before dipping below \$6.20 near July 1 as the prospects for a large crop from a record U.S. soybean acreage began to emerge. Dry weather in key producing states (Illinois and Indiana) during July and August subsequently brought a price rally back above \$8.00 just prior to contract expiration. (It is interesting to note that the surge in September went above the \$8.03 high back on March 11 but never *closed* above that level.)

The reliability of the hook-reversal formation is in the 60–70 percent range, somewhat below that for key reversals. But the hook reversals are more widely observed and thus create more opportunities for observant hedgers and speculators.

Hook reversals are more common than key reversals, but are also generally seen to be less reliable. Management techniques are similar to those for the key-reversal top or bottom. These formations create an opportunity to sell near the highs and buy near the lows, and this is always appealing to many traders.

Island Reversals

The key to the island-reversal top or bottom is the *gaps* that appear on the chart. Later in the chapter, the chart gaps will be discussed in more detail. Here, it is sufficient to

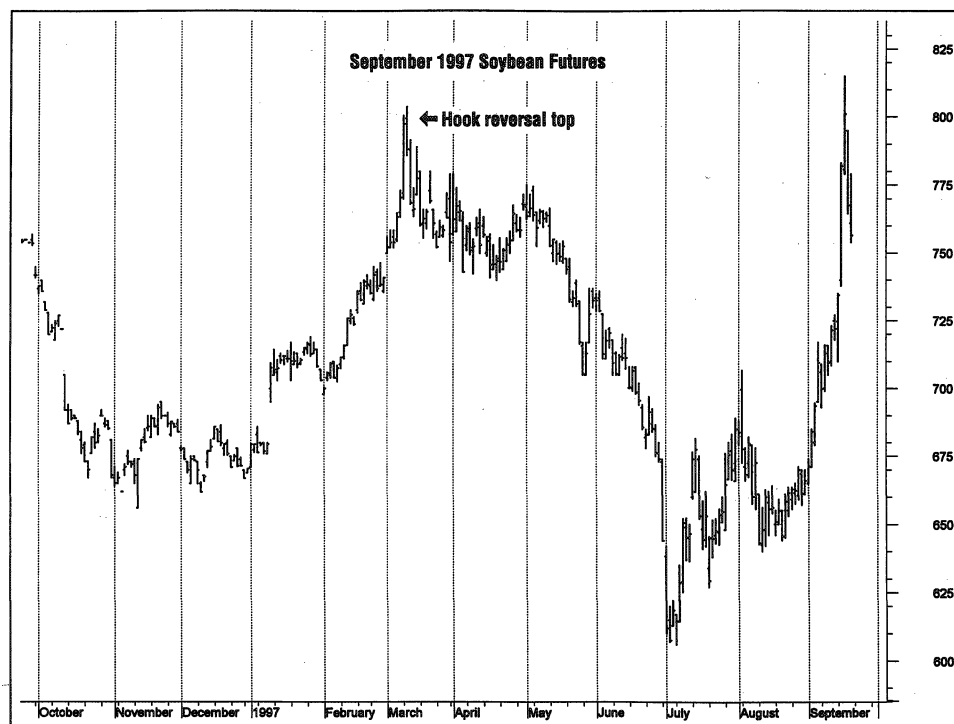


FIGURE 4.22

A Hook-Reversal Top on
September 1997
Soybean Futures

note that a gap occurs in a rising market when the market is trying to go up so fast that it does not bother to trade over some price range, or in a declining market that is moving rapidly lower. Figure 4.23 demonstrates an island-reversal topping pattern.

Note the price gap as the market rallies, trades for a few days, and then records a second price gap as prices falter. The “island” of activity above the gaps can be viewed as a period in which the market is attempting to digest the available information and form a consensus on the needed price direction. In this instance, the market appears to realize with a rush that the higher prices cannot be sustained. Traders holding long positions start to offset, and hedgers and speculators looking to sell the market start to take action. The result is a significant topping pattern on the chart. In the case of an island-reversal bottom, of course, the island of activity is left behind at the temporary lower prices as the market starts a major rally.

Management of this formation is not easy. Often, it is not apparent that a top, for example, is being recorded until the second gap is left as the market drops. An effective approach is to move aggressively and sell after the island reversal is clearly present. This is especially true for the risk-averse producer or the producer who does not have the financial prowess to accept the risk of lower prices.

A second approach is to place a *limit-price sell order* just below the bottom of the second gap that leaves the island of activity. The market is likely to stage a corrective rally back up toward that chart gap before moving lower. A limit-price order at or just below the bottom of the gap is thus an alternative. An order placed below the bottom of the gap is more likely to be filled.

Once again, there is an opportunity to review the importance of where the order is placed. There *will* be a cluster of sell orders near the bottom of, or in, the chart gap as the market starts to stage any corrective rally. Technicians see this as an effective

place to enter the market from the short side and will tend to place sell orders accordingly. To increase the chances of getting the limit-price sell order filled, the trader should look at placing the order just *below* the lower part of the gap. As a general rule of thumb, use at least 10 percent of the daily limit move in the commodity. That would mean 1 cent per bushel for corn (daily limit is 12 cents) and \$.15 per hundredweight for cattle (daily limits are \$1.50 per hundredweight), to illustrate. *Informed placement will increase significantly the probability of getting the sell order filled.*

When an island-reversal bottom emerges, the possible approaches are comparable. To lift short positions or to place long hedges, just buy the market aggressively. An alternative is a limit-price buy order just above the top of the gap that completed the formation. The market is likely to stage a corrective dip back down toward the gap before going higher. This notion of “corrections” toward chart gaps will come up again later in the chapter, and the market’s tendency to correct is the key to placement of orders when island-reversal formations are involved.

Figure 4.24 demonstrates an island-reversal bottom on wheat futures. A small gap occurred in late June followed by an “island” of activity that lasted nine days before the market gapped up on July 14. Through July 21, the market corrected down into the July 14 gap, then gapped higher again on a price surge that reached to \$4.04 on August 29. Again, note the chance to get a buy order filled that was placed near the top of the July 14 price gap. The market does tend to give you a second chance, but a buy order near the bottom of that price gap that completed the island-reversal bottom would *not* have been filled.

The reliability of completed island-reversal formations is in the 70–80 percent range. Often, it is recognition that a top or bottom has occurred that is important to

FIGURE 4.23
An Island-Reversal Top
on a Bar Chart



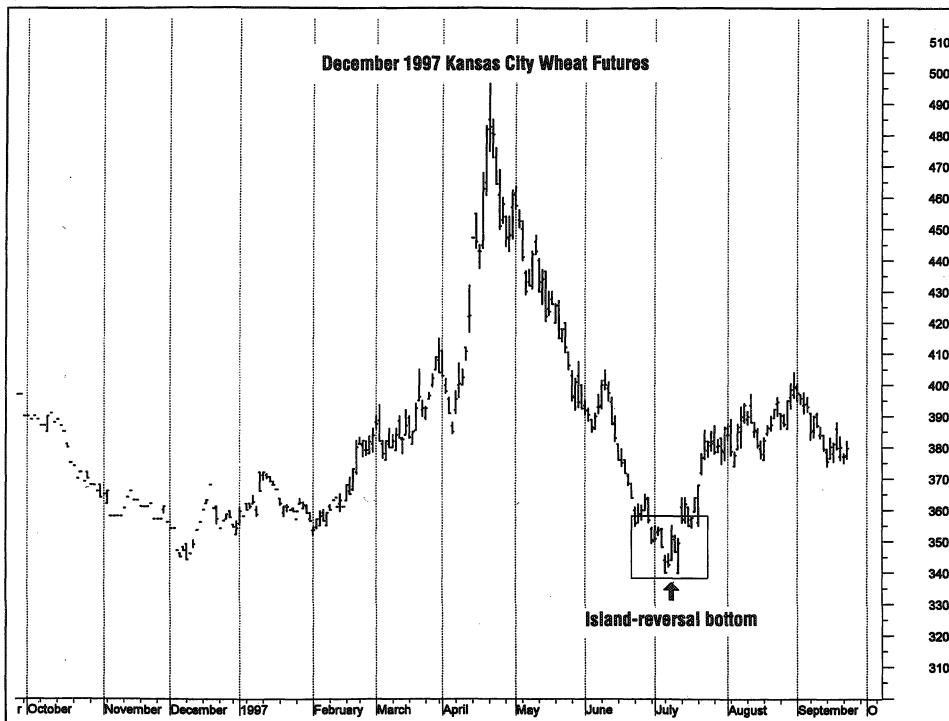


FIGURE 4.24
An Island-Reversal
Bottom on December
1997 Kansas City
Wheat Futures Chart

subsequent decisions, and the island-reversal patterns are particularly useful in that context.

The island-reversal pattern is distinctive in appearance. Chart gaps are involved, and the gaps become important. A sell order near the bottom of the gap that completes an island-reversal top, as prices start a corrective rally back up toward the chart gap, has a good chance of being filled at a favorable price level. A buy order near the top of the gap in an island-reversal bottom is a correct approach. The formations are very reliable when completed.

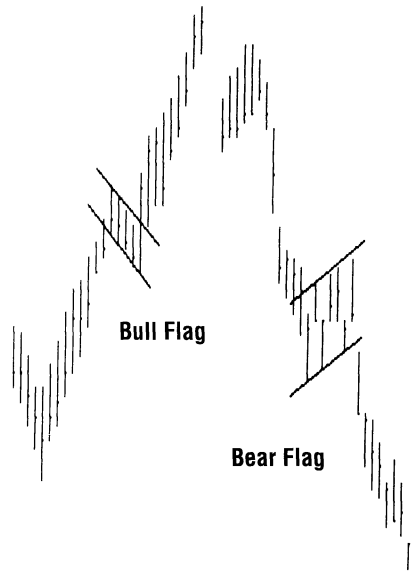
Consolidation Patterns

Coverage to this point in the chapter has dealt with ways of spotting or predicting reversals in the direction of price trend. The trend line, when penetrated, signals a change in direction. The topping or bottoming formations, such as the key reversals, signal an end to a trend in prices.

Once a price move has started, the charts tend to register *consolidation patterns*. After starting a major move, the market often tends to pause and consolidate for a few days before resuming the increasingly apparent price trend. The consolidation phase takes on often recognizable shapes or patterns. The ability to recognize and interpret the consolidation patterns can be very important to the decision maker looking for a chance to add hedges, or the trader with positions in the market trying to decide whether the price trends that are apparent on the charts are approaching completion.

FIGURE 4.25

Demonstration of Bull and Bear Flags on a Bar Chart



In discussing the more important consolidation patterns, it is useful to review and emphasize the concepts of bullish and bearish in describing the markets. The term *bullish*, you will recall, suggests prices are moving higher or are expected to move higher. The term *bearish* suggests prices are expected to move lower.

Flag Formations Easily recognized and reliable formations, the *bull flag* occurs in the midst of a major uptrend, the *bear flag* in a major downtrend. Figure 4.25 demonstrates both.

The flag formations are “resting places” or periods of consolidation after the market has moved for several days. When a top occurs, for example, and a widely recognized sell signal such as a key reversal is observed, the trader using the charts to guide timing of actions (hedger or speculator) tends to establish short positions in the market. A few days later, the psychological dimension of the market starts to emerge. The recently established short positions are now profitable, and there is self-imposed pressure for the short trader to take profits by buying to offset the short positions. Buying to cover or offset the now-profitable short positions puts the trader who was a recent seller on the same side of the market as those traders who are buying because they think the market should move higher. A brief price rally develops. In a downward-moving market, the initial price plunge often takes the shape of a *flagpole*, and the period of consolidation develops a *flag* with an ascending shape. The flag portion of the bear flag is formed by ascending parallel lines sketched across the highs and lows of the consolidation pattern.

A close below the lower parallel of the bear flag signals a continuation of the downtrend in price. By projecting the length of the flagpole from the breakout point, a minimum projection of the extended price move down can be generated. Figure 4.26 demonstrates. This is a reliable projection, and the technical trader either places or holds existing short positions with a feeling of confidence that the downtrend will continue. In Figure 4.26, the length of the flagpole is labeled “A,” and this is the magnitude of the expected price move when the market moves lower from the flag for-

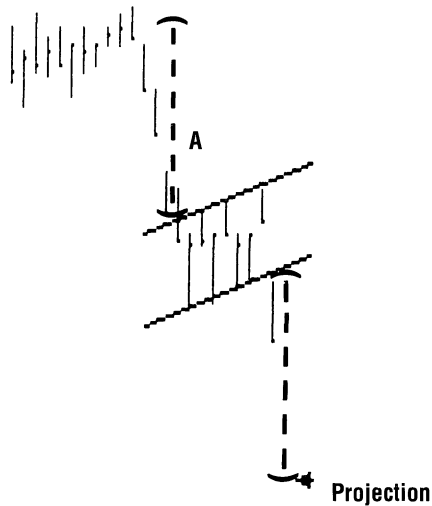


FIGURE 4.26
Price Projection from a
Bear Flag as the
Downtrend Is Continued

mation. The price range in “A” is extended downward from the point at which price moves below the flag.

A bear flag is demonstrated on the September 1997 corn futures (Figure 4.27). Note the characteristic shape of the consolidation pattern in late May and early June. The idea of a “flagpole” is not very clear on this chart unless you go back up to the action after the price decline through the support plane at the April lows near \$2.85. The “flagpole” on the chart uses that level as a starting point. Note that prior to the late May–early June development there were several mini “bear flags” as the market paused every few days. Ultimately, as the prospects for a large 1997 crop filtered into the market, prices were pushed below \$2.30 essentially matching the projection that could be gleaned from the chart. The July–August dry conditions that were mentioned earlier for Illinois and Indiana then prompted a price rally.

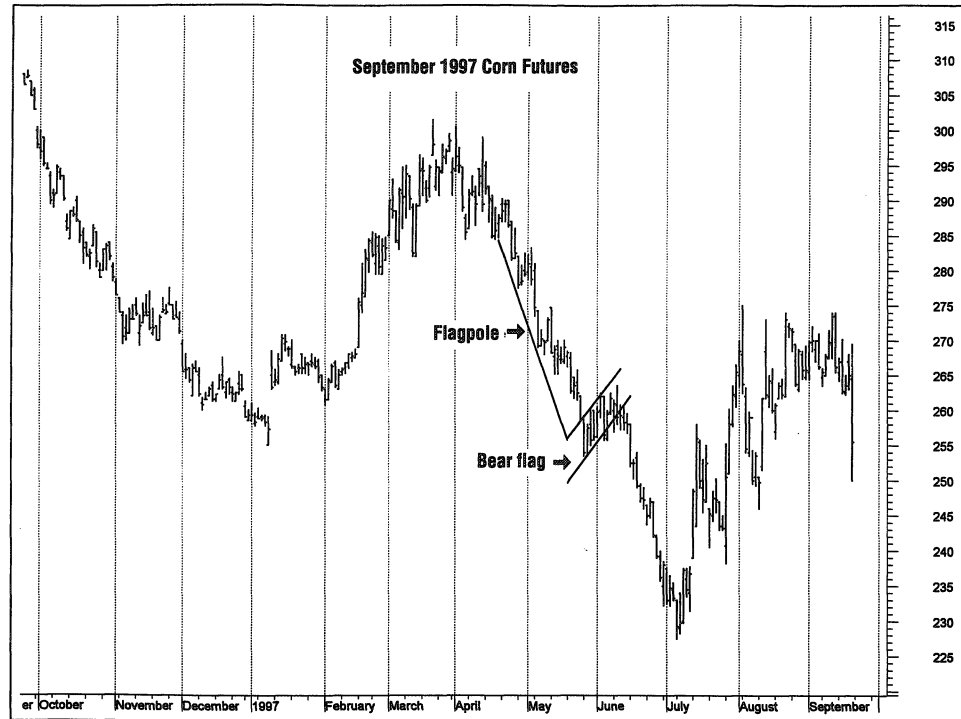
There is an interesting message here. If the producer knows nothing about charts and chart patterns, how is perspective formed? All the prices shown on the September corn futures are within a reasonable range that might emerge from an analysis of supply–demand fundamentals. Without the chart and the opportunity to observe the bear flag as it forms, will you as a producer feel comfortable holding short hedges? *The importance of technical analysis, very basic technical analysis, in the timing of pricing decisions is very apparent here.* The probability that a major price move will follow a break from a flag formation is in the 70–80 percent range, so the formations are quite reliable.

As the flag formations start to develop, it is important to monitor developments to determine whether it is indeed a consolidation pattern or some type of topping or bottoming formation. A price break down from a bear flag, such as the late May–early June pattern in Figure 4.27, could turn out to be a double bottom if prices hold across the low in the flag formation and start to turn higher.

The concept of trading volume as an aid to interpretation of the charts was introduced earlier in the chapter. If the price plunge through the bottom of a bear flag occurs on a high-volume day, the sell signal is authenticated. The June 16 price break from the bear flag on September corn was on a large but not huge volume—but above any volume since May 28. The fact that volume was smaller as the flag formed also tends to confirm it as a consolidation pattern rather than a bottom. Trad-

FIGURE 4.27

A Bear Flag on
September 1997 Corn
Futures



ing volume is in newspapers and is estimated within the day on most electronic services.

A second aid is to watch to see whether *open interest* is declining. Open interest is the number of positions in futures for a particular commodity that have not been offset or closed out. Assume a hedger enters the market and sells 10 corn futures contracts on a particular day. A new buyer, long hedger or speculator, comes into the market and buys the 10 contracts. Open interest would increase by 10 contracts if those new positions are in place at the close of trade at the end of the day, all other things equal.

The use of open interest will be treated in more detail later in the chapter, but declining open interest suggests that *short covering* is causing the observed bear flag. Such action argues in favor of a consolidation pattern rather than a bottom formation. When holders of short positions take profits and exit the market, open interest will decline. A decline in open interest tends to identify price increases as a *short-covering rally* and not a bottom in the market. Open interest *was* declining during the formation of the bear flag on the September corn chart.

If the prices are trending higher, a decline in open interest suggests it is a bull flag rather than a topping formation, especially if the potential consolidation pattern is significantly below life-of-contract highs. When holders of long positions take profits, open interest will decline. That action suggests a consolidation pattern and suggests that prices will continue higher rather than record some topping action.

Figure 4.28 shows a bull flag on October 1997 feeder cattle futures. The early-July pattern came before prices surged higher by about the same amount as the flagpole that stretches back down toward \$78.70 would have predicted. The push up through the resistance plane across the highs near \$78.70 in May and June gives a logical place to start the flagpole measurement.

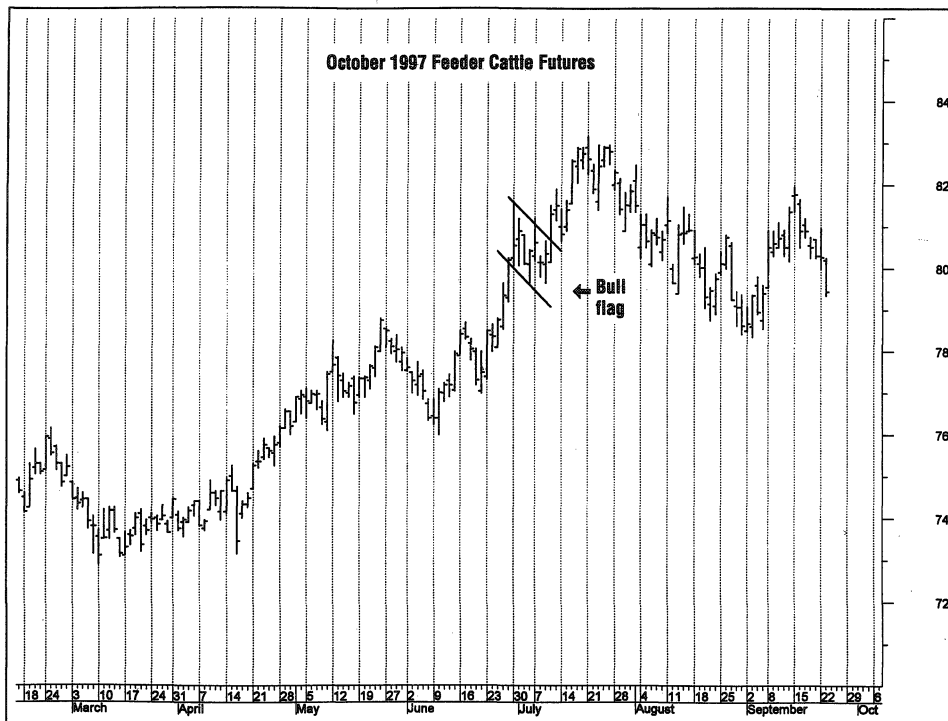


FIGURE 4.28
A Bull Flag on October
1997 Feeder Cattle
Futures

Management of the flag formations is fairly apparent. A close below the line forming the bottom of a bear flag is a sell signal for hedger and speculator alike. It also confirms to the holder of short hedges that the position is correct and added price protection might be established prior to the anticipated further declines in price.

A close above the line forming the top of a bull flag is a buy signal for the long hedger and for the speculator inclined toward the long side. The selective short hedger who has short hedges in place would see the buy signal as an indication that the market is going significantly higher and consider lifting or offsetting the hedges. If long hedges are already established, holders of these positions keep them in place with renewed confidence that the market is going higher.

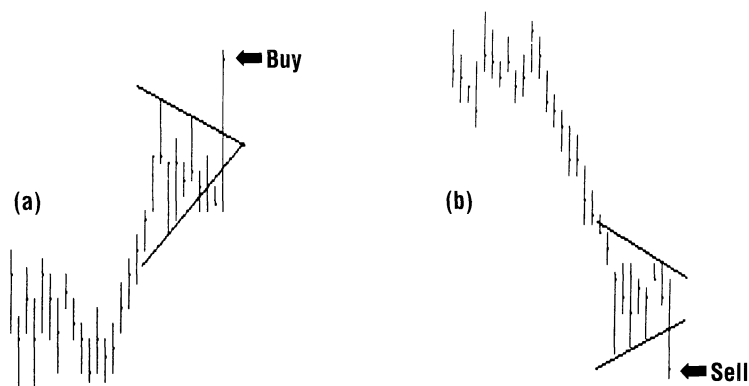
Flag formations are the most common of the consolidation patterns. The projected price moves are a minimum expectation and are generally quite reliable, in the 70–80 percent range. These consolidation patterns are important to traders trying to decide whether the prevailing trend has run its course and to producers looking to place late or catch-up hedges.

Triangles A second widely observed consolidation pattern is the *triangle*. Figure 4.29 demonstrates typical triangles in an upward-trending market, panel (a), and a downward-trending market, panel (b).

In general, the market is expected to move out of a triangle formation in the same direction that it was moving when the consolidation pattern started to develop. As with the flag formations, it is important to monitor open interest and other measures

FIGURE 4.29

Triangle Formations as Consolidation Patterns on a Bar Chart



that help the trader to distinguish between the triangle as a consolidation pattern and the possibility of a top or bottom in the markets.

Figure 4.30 illustrates a possible means of projecting the price move from a triangle in an upward-trending market. The procedure involves a parallel line to the line forming the bottom side of the triangle and is more accurate if the breakout to higher prices occurs before prices move out into the apex of the triangle. In the example shown, the price move would be expected to reach point X, the point where the parallel (dashed) line and a vertical plane above the apex of the triangle intersect.

Management of the triangle formations parallels management of the flag formations. A breakout to the upside in an upward-trending market is a buy signal, and a message to keep long hedges in place, and so forth. If potential short hedgers interpreted the consolidation pattern incorrectly as a topping formation and sold the market, they would have to consider lifting the hedge if they were operating as selective hedgers. A break to the upside from an obvious triangle formation will, with 70–80 percent reliability, bring a major price advance. The reliability is the same for breaks below a bearish triangle.

Figure 4.31 shows at least two obvious triangles in a surging hog market. The October 1997 lean hog futures started a major price rally in anticipation of a bullish late-March *Hogs and Pigs* report. The postreport action was still to the upside, reaching a high of \$77.00 on April 24. Triangles appear around \$70 and again around \$73.

The triangles are frequently seen as consolidation patterns. Prices typically move from the triangle formation in the same direction as the price direction when entering the consolidation pattern.

FIGURE 4.30

Projecting the Price Move from a Triangle Formation in an Upward-Trending Market



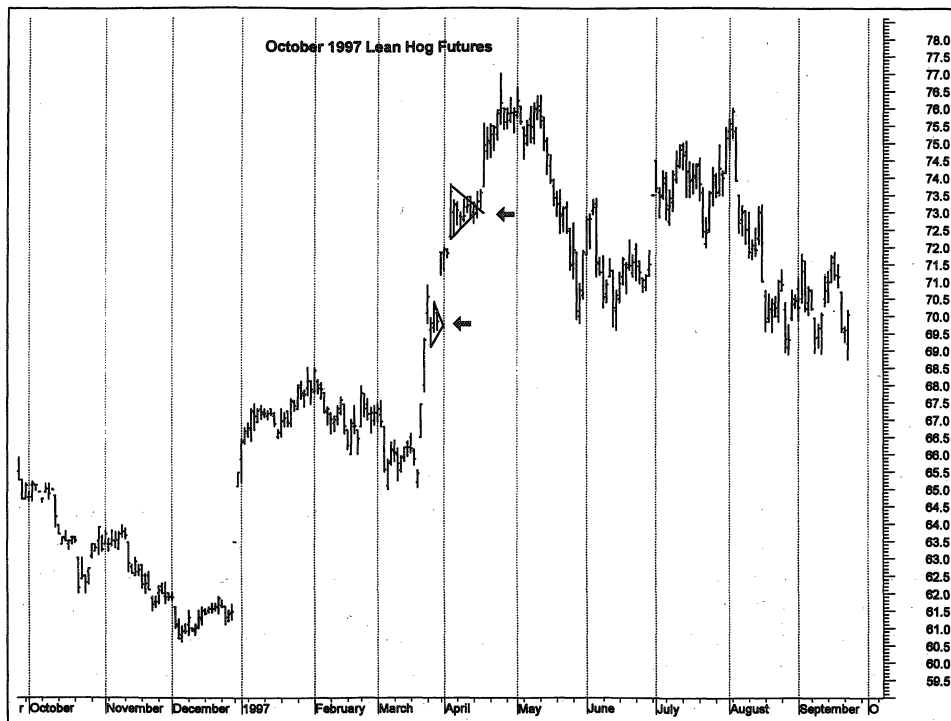


FIGURE 4.31
Bullish Triangles on
October 1997 Lean
Hog Futures

Pennants Best viewed as a small symmetrical triangle, many analysts differentiate the pennant from the triangle formation. Generally, the pennant is formed over fewer days, 10 days or less as a rule, than the triangle, which can take 10–20 trading days or more to complete. This suggests the “triangles” on the October hog contract in Figure 4.31 could have been called pennants or triangles.

There are no widely adopted means of projecting the price moves from the pennants shown in Figure 4.32. Some analysts use the staff of the pennant in the same manner as the flagpole on the flag formations. As with the triangle, the direction of price movement coming out of the pennant is expected to be the same as the direction of movement coming into the pennant. If this were not true, of course, *ex post*

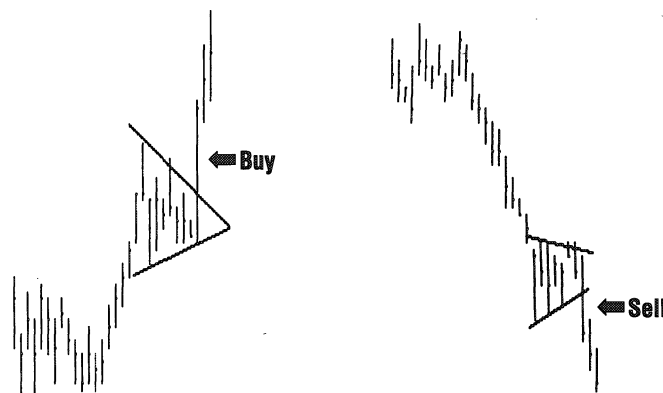


FIGURE 4.32
Demonstration of
Pennants as
Consolidation Patterns
on a Bar Chart

observation would confirm that it was not a consolidation pattern at all, but either a top or bottom in the market.

Management of the pennants parallels the discussion of management of flags and triangles. This is a less reliable consolidation pattern than the flags or triangles, more nearly in the 60 percent area. Some analysts feel the direction of subsequent price moves is less predictable for the pennant relative to the flag formations. Nonetheless, a move out of a bull pennant is going to signal a significant price move up in a majority of the cases. No current charts are shown to illustrate triangles and pennants. Virtually any futures chart will show one or more patterns that appear as periods of consolidation and take the shape of either a triangle or a pennant.

Perhaps the least reliable of the consolidation patterns covered here, the pennants do suggest the direction of emerging price moves for many analysts. Significant price moves from the pennants are commonplace.

Congestion Areas Often, the consolidation occurs in what can only be described as congestion areas. Figure 4.33 demonstrates. The market pauses and trades for several days in a sideways pattern.

Here, we are dealing with periods of consolidation that fail to take on the distinguishing shape of a flag, triangle, and so on. Often a larger number of trading days is involved as the market pauses, takes stock of the prevailing and ever-changing base of information, and builds a consensus on the direction in which to move.

The top of the congestion area in an upward-trending market can be treated as a resistance plane. In a down market, the bottom constitutes a support plane. When the planes are “taken out” via a close above the resistance place or below a support plane, the correct management action parallels the earlier discussion on resistance and support planes. Once a move out of the congestion area is recorded, price often moves quickly up or down. *Prompt action by the trader is important.*

There is no universally accepted projection technique associated with the congestion areas, but many analysts will measure the vertical price range of the area and project that distance up or down. Some analysts prefer to use the horizontal width of the area as a projection device. Implicitly, this latter approach is saying that the longer the time period required for the market to digest information and decide which way to go, the bigger the price move will be.

Major price moves often evolve after price breaks out of a congestion area. In general, the longer the time period involved, the greater the price move is expected to be.

FIGURE 4.33

Congestion Areas as
Possible Consolidation
Patterns on a Bar Chart



Additional Chart Signals

Emphasis to this point has been on selected chart patterns and the complementary aids to their interpretation. There are additional chart developments, not patterns per se, that are very useful guides to the trader. Two examples are *chart gaps* and *corrections*.

Chart Gaps Often seen after the market has been “shocked” with new and surprising information, a gap appears on the chart when the market tries to move up or down quickly. The idea of a chart gap emerged earlier in the chapter in discussion of island-reversal tops or bottoms, but the chart gaps are important in and of themselves.

Several characteristics of market behavior in and around a chart gap become important. First, there is the previously observed tendency for the market to attempt to “fill” the gap. That is, the market usually attempts to come back and trade over the price ground that was skipped when the gap occurred. It is said that nature abhors a vacuum and that the futures market sees a price gap as a type of vacuum. Figure 4.34 demonstrates the December 1997 corn futures contract and clearly shows the tendency in the market to fill chart gaps by coming back and trading over that previously neglected price range. Note, in particular, the chart gap left in early July when the market gaps higher from the \$2.37 level. A small down gap that appears a few days later *is* filled before the disciplined trader is rewarded, on the 11th day after the initial gap occurs, with a price correction down into the top of the chart gap. *Long hedgers waiting to take positions, potential long speculators, and short speculators and selective*

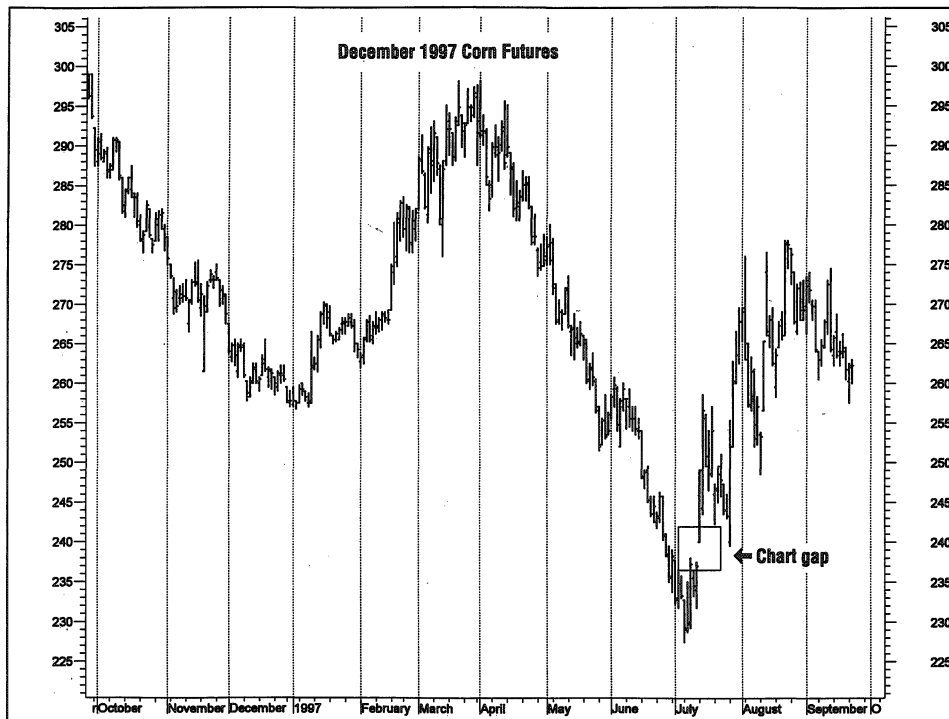


FIGURE 4.34
Market Action to Fill a
Gap on the December
1997 Corn Futures
Contract

short hedgers will all tend to have buy orders in the top of the gap. Not surprisingly, the market held there and traded sharply higher in subsequent days as the buying pressure overwhelmed the lingering selling pressure.

Remember, management of trades around the chart gap becomes important to the hedger and speculator alike. As suggested, the selective long hedger can use the dip back down toward the gap to add long positions or replace any long hedges that might have been removed as prices trended lower earlier in the year. Selective short hedgers can use the dip to the top of the gap to lift any short hedges before prices surge to higher levels.

When the trend in the market is down, both the short hedger and the bearish speculator will want to sell a price rally back up toward a gap area. The long hedger, caught in a downward-trending market, can use the rally toward the gaps to remove long hedge positions as favorably as possible, positions that now appear to be incorrect. The long hedger is then in a position to benefit from lower prices in the cash market, and those interested in short positions—hedgers and speculators—have seen a chance to get short before lower prices come.

The chart gaps provide yet another opportunity to hammer at the importance of management of orders. Consider, yet again, the position of a potential long hedger or long speculator who sees the market “gap” higher, as with the December 1997 corn in early July, and wants to get long hedges or speculative positions in place. As the market starts to correct back down toward the chart gap, there are sure to be buy orders in place, but it is impossible to know for sure just where the concentration of orders will be. But it is important to visualize what is happening and place orders accordingly. *The probability of getting a buy order filled is increased if it is placed at or just above the top of the gap.* An order to buy near the middle or bottom of the gap will likely require other more aggressive traders’ buy orders at higher prices to be completed before the buy order you placed at the bottom of the gap will be reached. *Keep in mind that every trader, hedger and speculator, who uses charts sees the same chart formation.* Each will, or should, decide where the order should be placed to balance the price level at which they are willing to buy and the probability of getting the order filled. As an individual decision maker, you should try to envision the process that is going on and place orders that fit your market plan. This is especially true if the financial viability of the program could be at risk if the orders are not reached and filled and therefore no protection is established.

In a down market, of course, the market will try to come back up and fill the gap. In this instance, the short hedgers will be looking to add to their short positions and the bearish speculator will be inclined to sell the rally. There will be a cluster of sell orders near the bottom of the gap and in the gap awaiting the expected rally. *The chances of filling the sell order will be increased if it is placed at, or just below, the bottom of the gap.*

You should be aware that we could have selected futures charts to demonstrate *filling* of chart gaps. It is often the case that the gaps will be completely spanned and orders placed anywhere in the gap will be filled. The late April bear flag formation filled the small chart gap on that same December 1997 corn futures charts. But the circumstances demonstrated by the December 1997 corn futures in early July are not at all unusual, and they often present very important opportunities.

A second characteristic of market behavior around the gaps emerges when the gap is not filled within a few days (5–10 days) after it is created. When this occurs, the gap becomes a candidate to be a *breakaway gap*, and the technician watches for another gap to emerge as the market move gathers momentum. This second gap can

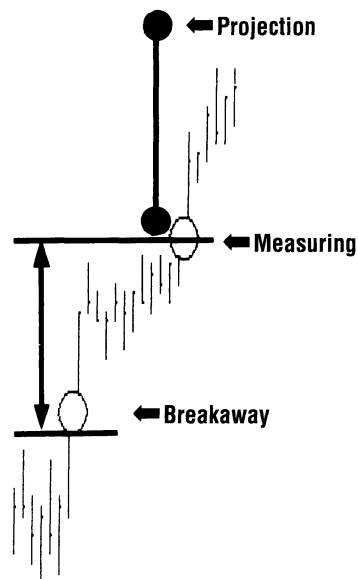


FIGURE 4.35
Demonstration of the
Price Projection Using a
Series of Chart Gaps

become a *measuring gap*, and we then have a means of projecting the market move. Figure 4.35 demonstrates using an upward-trending market. After the market moves quickly higher from some bottoming formation such as a head-and-shoulders, the second or measuring gap emerges when a broad consensus develops that the changing supply–demand fundamentals will support still higher prices. These dramatic moves are often based on both new buying, as speculators and long hedgers enter the market, and covering of short positions, as short speculators close out now losing trades and selective short hedgers buy to offset short hedges.

As suggested in Figure 4.35, the market is expected to move a distance measured by the start of the breakaway gap to the middle of the measuring gap. Often, after the projection is met and either topping or bottoming action begins (topping action in this instance), a third gap will emerge called an *exhaustion gap*. Many analysts use the presence of the exhaustion gap as a means of helping spot bottoming or topping action as the concerted action starts to disappear and uncertainty on future price direction starts to emerge. *The breakaway gap and the measuring gap are widely watched and widely used by technically oriented traders.*

You should note that the unfilled gap on the December corn chart back in Figure 4.34 is a candidate to become a breakaway gap. The second gap that appeared (around August 10) as the market moved higher becomes a measuring gap allowing us to project the magnitude of the market move. Extending up a distance from the bottom of the breakaway gap to the middle of the measuring gap, from \$2.32 to \$2.55, suggests prices will move up some \$.23. Adding \$.23 to \$2.55 gives \$2.78, essentially the level the market reached on August 21.

Placing buy orders near the top of gaps in ascending markets and sell orders near the bottom of the gaps in descending markets prepares the trader to manage his or her positions under the assumption the gap might become a breakaway gap. Often, what turns out to be a breakaway gap is partially filled before prices surge, and the orders to establish long positions or lift short positions will be filled in this instance. After the major price move starts, the traders are then ready to hold and manage their positions as they watch for a measuring gap. If the buy orders near the top of a gap in

a surging market are not filled within a few days, it pays to be alert. Short positions that do not get offset by buying back would bring major losses to the speculator and major opportunity costs to the selective hedger.

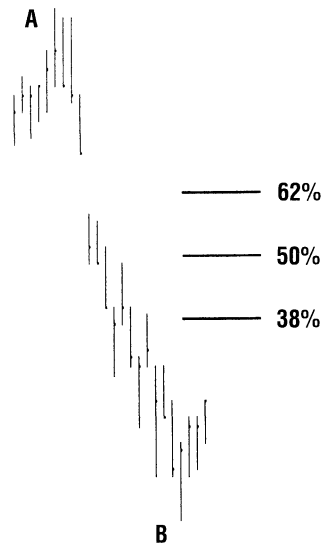
On the corn chart, the top of the early July gap was \$2.40, with the gap occurring on July 14. Some two weeks later, on July 28, the market dipped down into the top of the gap, reaching as low as \$2.39½. Buy orders at the top of the gap were filled, and the market moved up to \$2.78.

Chart gaps on the bar chart are widely watched and widely used in managing a trading program. Observation of market actions over time will convince the chart watcher that many analysts employ the gaps in placing buy and sell orders, and those actions suggest a self-fulfilling prophecy dimension unless the fundamental picture changes significantly.

Corrections The concept of *market corrections* has roots in many theories of market behavior, including the sophisticated Elliott Wave theory. The basic idea is that the futures market, as is the case with most types of markets, overreacts to an infusion of new or unexpected information. If the initial reaction carries too far and moves beyond what appears to be the proper market-clearing price, the market will then “correct” at least part of that overreaction.

Figure 4.36 demonstrates and records three possible levels of the expected corrections. Chart analysts tend to watch for corrections of 38, 50, or 62 percent. In Figure 4.36, the 38, 50, and 62 percent corrections of the price decline from *A* to *B* are calculated starting at *B*, the low price after the move down from the high at *A*. The corrections are then marked on the chart and the chart-oriented trader will start to monitor the corrections and prepare to sell the market. If the 38 percent level is exceeded, the analyst then watches for the 50 percent correction. If that is exceeded, the 62 percent correction is anticipated and actions to sell are made ready. If the correction of the price move from *A* to *B* exceeds 62 percent, there is then a tendency to conclude that the market is not just making a correction. Rather, the direction of

FIGURE 4.36
Illustration of the
Expected Price
“Corrections” After a
Major Price Move



price trend is changing from down to up because the supply–demand balance has changed and short positions need to be lifted on some recognizable chart signal.

Understanding that the market will tend to correct and then managing that tendency can be very important. Consider the mental state of cattle feeders with a large inventory of cattle or producers holding soybeans in on-farm storage who see a major price break and realize they have no price protection on inventories that can be worth millions. As the prices plunge to lower and lower levels, panic tends to set in, and the tendency is to rush in and sell the market before it goes still lower.

If you are aware that the market will often correct to the upside, there is less self-imposed pressure to rush in and sell on a panicky basis. It is easier to be disciplined and wait if there is a reasonable degree of confidence that the market will make a correction. *Then, of course, it is important that you or any other trader needing short positions be disciplined enough to step up and establish short positions in an upward-moving market as the correction to the upside develops.* Knowing the market is likely to correct back to higher prices is the necessary condition for disciplined trading, and the 38, 50, and 62 percent corrections give possible pricing objectives. Being willing to establish short hedges when the now upward-moving market starts to falter around a 50 percent correction, for example, is the sign of a disciplined hedging program. This is very difficult for many producers!

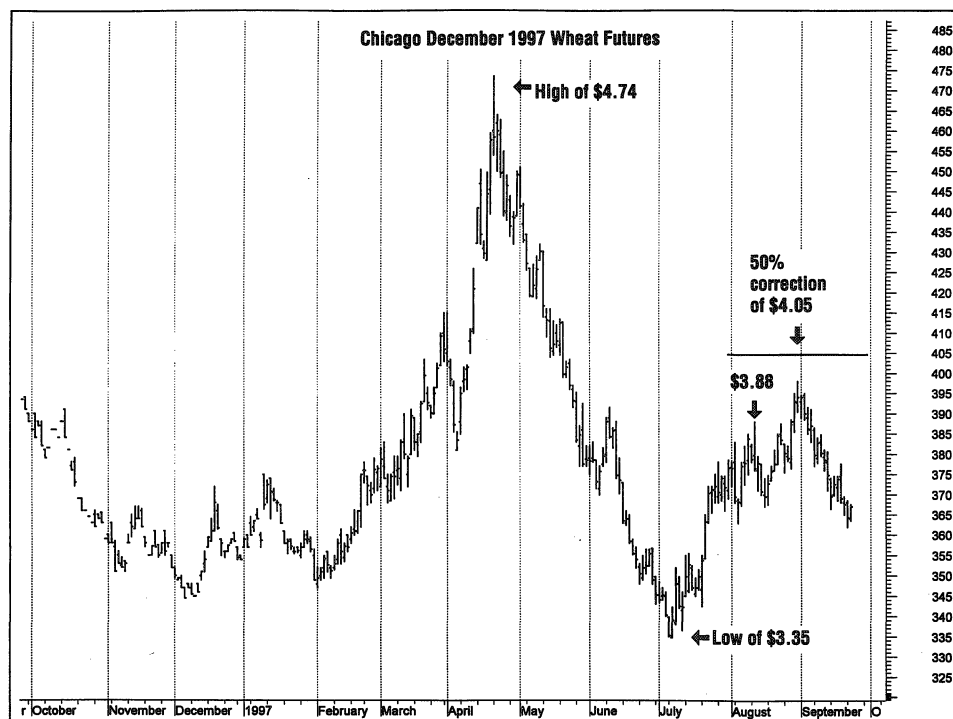
Conversely, the long hedger or other trader looking to establish long positions or lift short hedges can expect to see a correction of a recent upward surge in prices. The upward-trending markets tend to be orderly in their ascent, exhibiting a five-wave pattern. Wave 1 launches the move from some bottoming pattern as the consensus on the supply–demand balance starts to change. Wave 2 is a correction of wave 1, and wave 3 then emerges as the often explosive move to higher prices. Wave 4 corrects wave 3, and wave 5 then must make a new high compared to the highs in wave 3. The corrective waves in a bull market, waves 2 and 4, often approximate one of the percentage corrections just discussed—the 38, 50, or 62 percent corrections.

Figure 4.37 demonstrates the application of this important tendency to correct. The wheat market staged a long downtrend as the June–July harvest approached in 1997. Remember, the market was coming off a 1995–96 period in which record high prices were recorded in the face of tight world stocks. The move was from \$4.74 on April 21 to \$3.35 on July 8, a price decline of \$1.39. Adding 38 percent of the \$1.39 back to \$3.35 gives $\$3.35 + .53$ and an initial objective of \$3.88. On August 12, the market went to *exactly* \$3.88 before trading lower for several days. The subsequent rally was an attempt, perhaps, to reach a 50 percent correction objective of \$4.05, but the market failed after reaching \$3.98 on August 29.

The wheat market, in September 1997, was apparently caught in a bear market. These markets tend to show a three-wave move, often labeled *A*, *B*, and *C*. *If* this is the correct reading of the chart, the move down to \$3.35 was *A*, and the correction was *B*. The *C*-wave would need to trade down through the \$3.35 level and record still lower prices. This might not be completed on the December chart, but it could occur on a later futures as the market moves into 1998 with a large expected wheat acreage after the 1996 farm bill legislation removed any acreage reduction requirement and as wheat acreage comes out of the long-term Conservation Reserve Program.

Bear markets, as suggested, are more likely to demonstrate a three-wave pattern, with wave 2 or *B* the corrective leg before prices move still lower. Every chart analyst would agree that the bear markets are quicker and more dramatic than the bull markets. A price increase that occurs across six months in a leisurely five-wave bull market can be wiped out by a bear move in six weeks or less.

FIGURE 4.37
Corrections on the
December 1997 Wheat
Futures Contract



Exactly which correction to expect will depend on how weak or strong the underlying supply–demand balance is—and we see another specific example of how fundamental and technical analysis can be complementary. If the market is moving lower, for example, and all the new pieces of information on either the supply or the demand side are tending to be bearish, it might be prudent to start placing sell orders on signs of faltering prices near a 38 percent rally to the upside. If the rally does carry to higher levels, more short positions can be added at the 50 percent and the 62 percent levels. This approach would employ an element of the scale-up placing of short hedges that always has merit. But be careful: applying this to the December 1997 wheat chart, the market could never get all the way to the 50 percent correction. You might want to be more aggressive with short hedges when the attempt at a 50 percent correction falls short. This is a market with bearish supply–demand fundamentals. (And keep in mind the even dollar levels, such as \$4, are *always* hard to penetrate.)

Conversely, if the supply–demand news is only mildly bearish, the producer might watch for something approaching a complete 62 percent correction before doing additional selling or starting a late, short-hedging selling program. Awareness of what is going on in terms of supply–demand fundamentals is important in making informed pricing decisions, and that awareness helps to instill more confidence in which corrective levels should be picked to start or resume a pricing program.

The futures markets tend to correct at least part of the major price moves before the trend resumes. Awareness of this tendency helps the trader to position orders correctly and helps bring the discipline needed to avoid the tendency to act or react on a panicky basis. The widely observed corrections in the futures market offer tangible evi-

dence of the complementarity in fundamental and technical dimensions of the markets.

COMPLEMENTS TO CHART PATTERNS

For virtually every chart pattern, every buy and sell signal, the volume and open-interest levels and/or changes in volume and open interest complement and reinforce the interpretation of the chart. Both concepts were introduced briefly earlier in the chapter, but more detailed coverage is needed. The user of the markets cannot afford to ignore what is happening in trading volume and in open interest.

Trading Volume

Trading volume is the total number of contracts traded for the day. *Volume is best viewed as an indicator or barometer of the level of intensity in the market.* In general, any sell or buy signal observed on the chart is going to be a more reliable signal if it occurs on a high-volume day. What is considered high volume is relative to the volume in recent trading days. Figure 4.38 demonstrates, with trading volume shown as a histogram at the bottom of the October 1997 live cattle contract used earlier to demonstrate a key-reversal top (see Figure 4.21). The chart is reproduced in Figure 4.38. Note the huge volume on July 29, the day of the reversal. The intensity in the market definitely confirmed this major top.

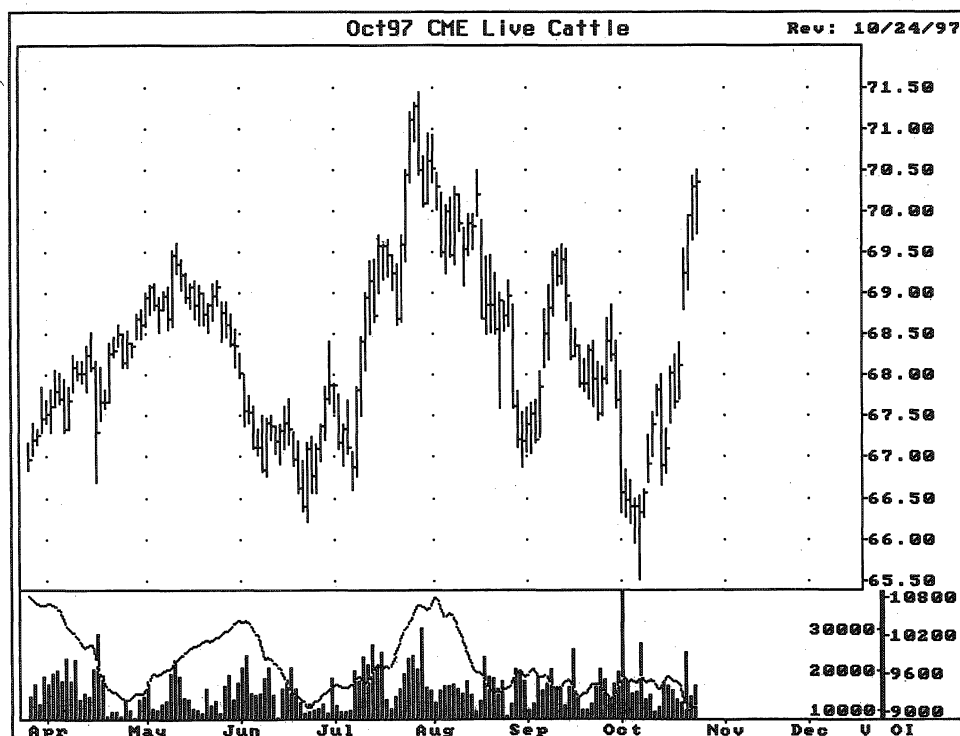


FIGURE 4.38
Demonstration of
Trading Volume on the
October 1997 Live
Cattle Futures Contract

In using trading volume, several guides are in order.

1. Look at trading volume for all the months being traded for that particular commodity.
2. Interpret volume on a limit-up or limit-down day carefully.
3. Trading volume will often be unusually low prior to a holiday, prior to a three-day weekend, or on the day prior to a major report.

Looking at volume across all contracts is preferred because activity during the delivery period will distort the messages from the trading volume in the nearby futures contract. Volume in the nearby futures contract declines progressively as the market moves into and through the delivery period. The exchanges often require both hedgers and speculators to reduce large positions in the markets prior to or during the period. This type of required action in the nearby contract can distort the measure of intensity in the market as a whole if only the volume in the single nearby futures is being monitored.

On days that the market is “locked” limit up or limit down, there will usually be very little trading volume. If the market is limit up, for example, there will typically be few willing sellers. The volume on a limit-move day clearly should not be contrasted to volume in recent nonlimit days. It *is* important, however, to look at the volume on limit-move days compared to the normal trading volume. If trading volume during a limit-move day is 25 to 50 percent of the normal volume on a typical trading day, that tends to send a signal that some traders were willing to sell at limit up or buy at limit down. There is not likely to be much follow-through to the upside the next day if traders are willing to sell at limit-up prices. Conversely, if there is little or no volume, a significant follow-through to higher prices is likely the next day.¹⁰

It is best to ignore the light volume prior to long weekends, holidays, or prior to a major report. The short-term traders—scalpers, day traders, and so on—are not likely to be active on these days and the volume will usually be very light. Trading volume will often be light prior to major reports. All traders, and especially speculators, will be reluctant to hold positions in futures through reports that are prone to be surprises. An example is the quarterly *Hogs and Pigs* reports referred to earlier, reports that often bring surprisingly high or low numbers and prompt dramatic postreport price moves. Traders are often reluctant to establish positions just prior to such reports, and trading volume will tend to be unusually light as the market waits on the report.

Open Interest

As noted earlier, the number of contracts that are outstanding or that have not been offset at the end of the trading day is open interest. There is no binding relationship between trading volume and open interest. Large daily volumes can be traded by day traders and scalpers, or traders looking for small intraday price moves, but there is

¹⁰A related measure is the size of the *pool of unfilled orders* at the close on a limit-move day. If there is a large pool, follow-through to the upside the next day after a limit-up move is more likely. Most commodity brokers will have access to estimates of the size of the pool of unfilled orders on the limit-move days, and the estimates of the pools of unfilled orders are often presented on modern electronic market-news distribution systems. The information is thus available to every interested user of the markets.

zero change in open interest from the activity if all positions are closed out or offset before the close of trading for the day.

Several patterns in open interest can be important aids to the interpretation of the charts. Figure 4.39 demonstrates. Note the peak and then the decline in open interest (the line at bottom) a few days before the trend reversal in the market as the market records new price highs and then starts to move lower. Such a pattern often occurs, and reflects the adage that new money, which reflects new selling and new buying, is needed to sustain a price trend to the upside.

Note also the pattern in open interest on the November feeder cattle futures in Figure 4.40. The open interest starts to falter before the market makes new highs and records a possible double top above \$84 in mid-July. The market had surged to a new high a few days earlier on July 16. *But open interest went down on July 16.* (Electronic systems allow you to pinpoint, in detail, what is happening on any particular day.) This faltering of open interest with prices still going up is a type of divergence and is a warning, often an early warning, that the market is ready to top.

Major trends, especially rallies, need new capital to continue, and increasing open interest indicates new capital is coming into the market. New traders are entering or existing traders are expanding their positions. In a bull market, new buyers are easy to find, but the market needs new sellers too. One group willing to sell in upward-trending markets is the short hedgers with price objectives at which they want to establish short positions. When that short hedging "capital" is exhausted, there may be no trader group left willing to sell the market—and open interest quits increasing. The market tops and turns lower.

A second use of developments in open interest comes during the short-covering price rally or the long-covering price correction to the downside. Figure 4.41

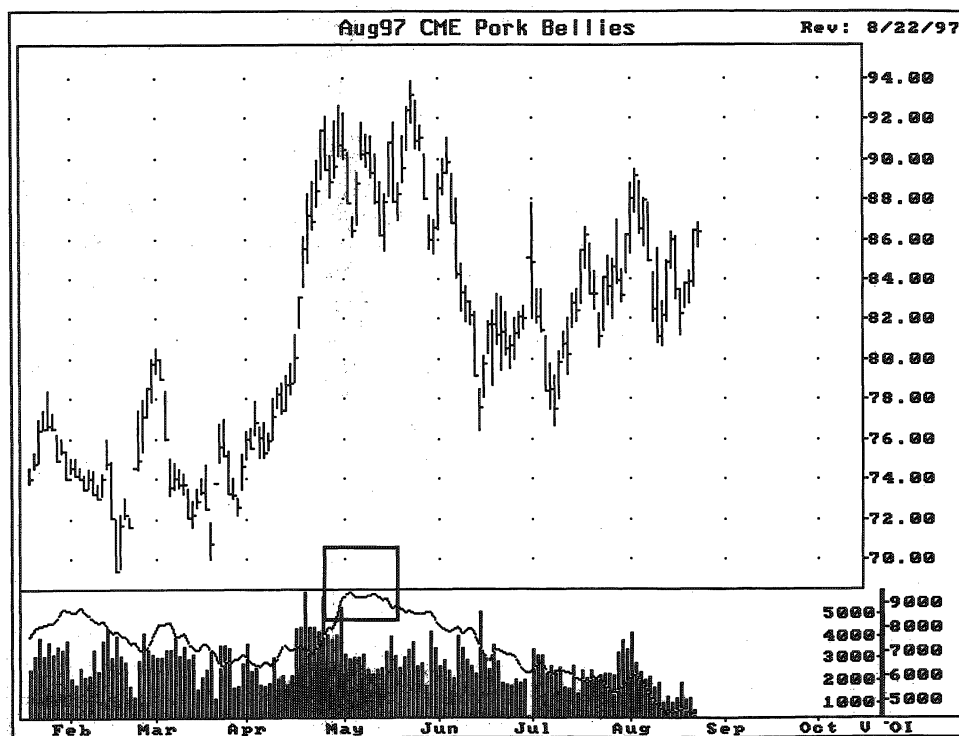


FIGURE 4.39
Demonstration of the
Pattern in Open Interest
to Anticipate and
Confirm a Top in the
Market

FIGURE 4.40

Demonstration of a Decline in Open Interest Prior to a Top, November 1997 Feeder Cattle Futures

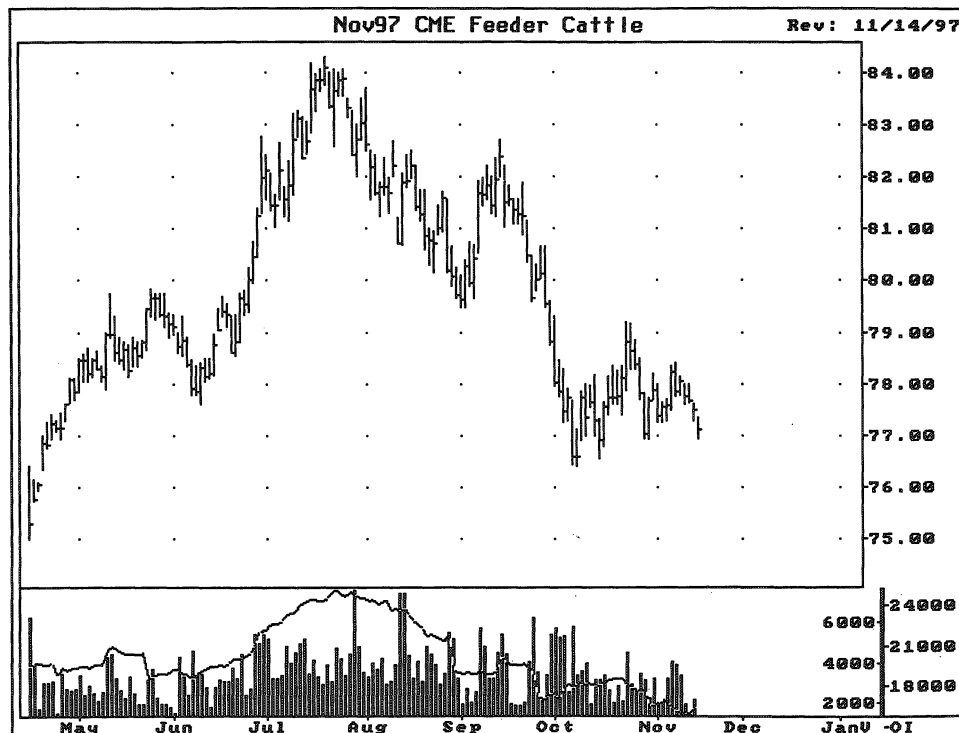
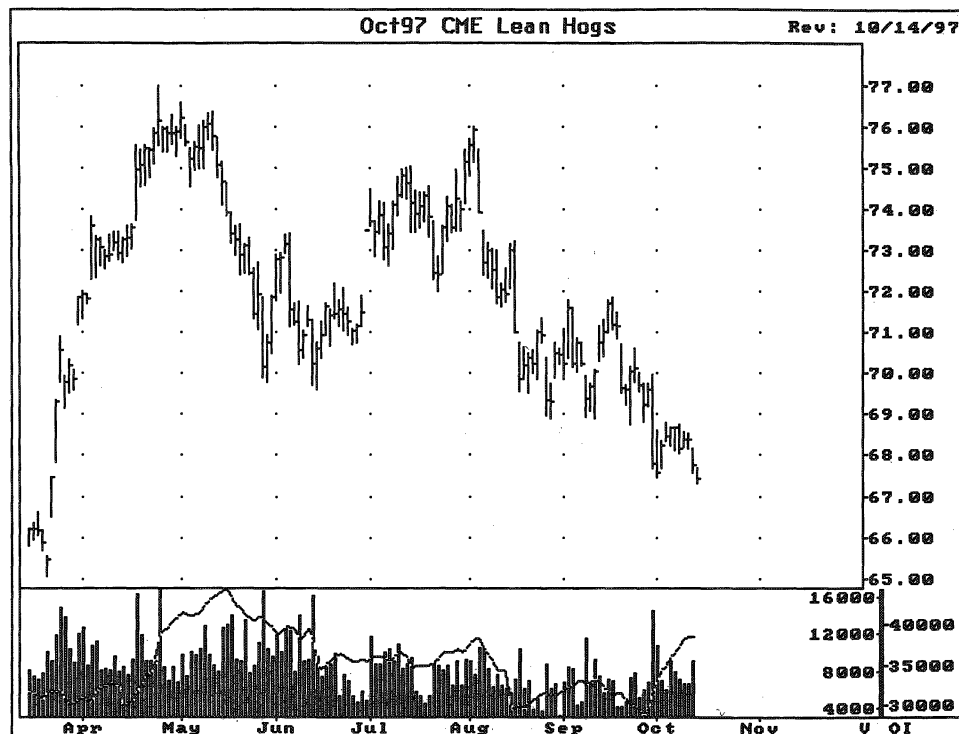


FIGURE 4.41

Demonstration of the Pattern in Open Interest During a Short-Covering Price Rally on the October 1997 Lean Hog Futures Chart



demonstrates one of the often-seen patterns using the October 1997 lean hog futures. In early August, the market gapped lower just below \$74 and then spent seven days in a short covering rally as the market tried to correct back up toward the gap. Open interest plummeted as holders of now-unprofitable short positions bought them back. This pattern of events suggests that the early August developments are not a bottom in the making, and that lower prices are yet to come. Prices did move significantly lower.

The decline in open interest shown by the October hog futures is very important to chart analysts attempting to determine whether they are seeing a consolidation pattern in a major price move down or some type of bottoming action. This point was made earlier in the chapter. If it is but a short-covering or profit-taking price rally, it is likely that the market is just consolidating and will soon continue the trend toward lower prices. During such a correction, a correction that might take the chart form of a bear flag or some other consolidation pattern, open interest *must* decline as traders with short positions offset. *Short hedgers need to hold their short positions.* Potential long hedgers are given the signal to wait to establish long positions. *Lower prices are likely after the consolidation is completed, and long hedges can be set at lower price—and cost—levels.*

A dip in open interest prior to bottoming action in a downtrending market is less frequently observed and is generally a less reliable early warning of a price reversal, but open interest patterns should still be monitored. In the grains and oilseeds in particular, a decline in open interest as some type of possible bottoming action is being observed may be a tip that the large commercial firms have decided the price downtrend is over and are starting to offset their profitable short-hedge positions.

Open interest is an important complement to bar chart analysis. Changes in open interest can help the trader spot emerging tops or bottoms in the market and are invaluable aids in attempts to distinguish between consolidation patterns and tops or bottoms in the markets.

Relative Strength Index

Among the additional aids to the reading or interpretation of the bar chart, the most important subset are the tools that have been developed to measure the momentum in the market. A widely used measure of momentum is the relative strength index (RSI).¹¹ Table 4.1 records the procedure for calculating a 14-day RSI. The series employs the concepts of a *down* index and an *up* index. The calculations are based on the day-to-day changes in the market for a particular commodity. The modern electronic distribution services typically include the 14-day RSI and usually offer the flexibility of calculating RSI measures of different lengths.

The RSI measure can be calculated for each of the contracts for which a commodity is traded. Most commercial hard-copy chart services calculate the RSI for the nearby month and move to the next month when the delivery period for the nearby

¹¹An excellent reference for more detailed coverage is the book by Wilder, *New Concepts in Technical Trading Systems*, listed in the references at the end of this chapter. Wilder is generally recognized as the leading authority in the development and use of the RSI and similarly conceived measures of momentum. For a broader and extensive treatment of the RSI and other technical tools, refer to the reference by Schwager.

TABLE 4.1

Procedure for
Calculating a 14-Day
Relative Strength Index

To calculate:

1. Record the last 14 day-to-day price changes based on closing prices.
2. Sum the negative and positive changes and divide each sum by 14 to create a "down average" and "up average," respectively.
3. Define Relative Strength Index as $(U)/(U + D)$ where U = up average and D = down average.
4. Employ $RSI = (U)/(U + D) \times 100$ to convert to percentages versus decimals.

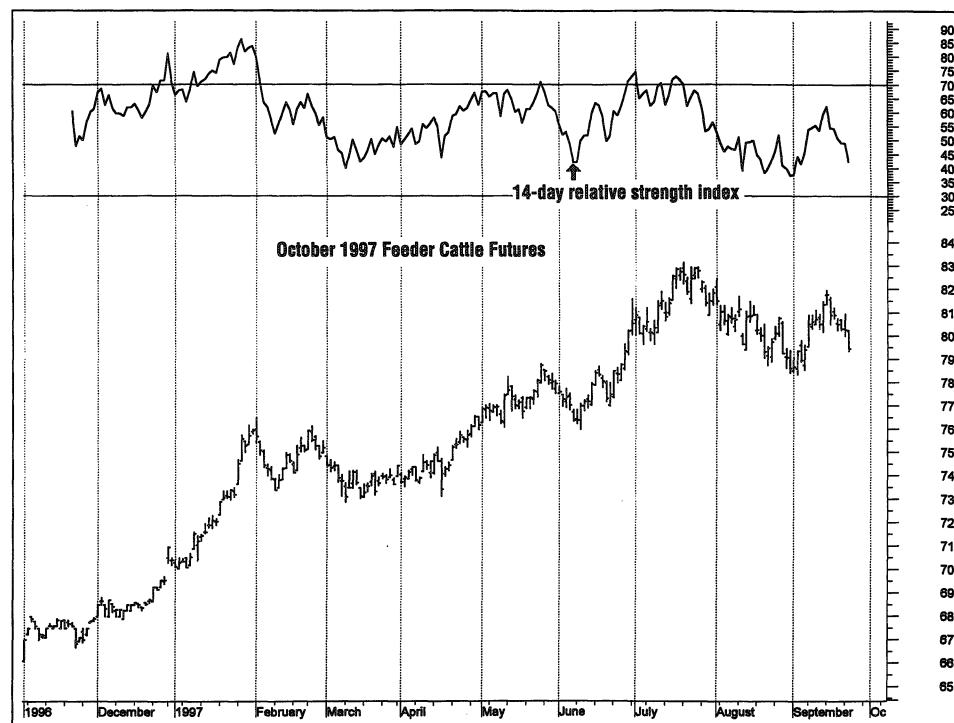
futures contract commences. Some chart services show the RSI for the nearby and for the new-crop contract in the grains and oilseeds. With software packages designed to handle the calculations and updating, many traders watch not only the RSI in the nearby contract, but calculate the RSI for each futures contract in which they might be trading.

Figure 4.42 demonstrates use of the 14-day RSI with the October 1997 feeder cattle contract. The levels 70 and 30 are the widely employed thresholds to denote *overbought* and *oversold* markets, respectively. Conceptually, when the RSI is approaching the 70 boundary, the market is moving to a status in which all the traders who want to buy the market have done so. The market is running out of momentum, is becoming overbought, and a reversal in price trend to the downside is imminent. The trader looking for an opportunity to place short hedges, lift long hedges, or establish a speculative short position should be alert and ready to take action.

Moves to the 30 level by the RSI suggest the potential pool of sellers is being exhausted. The market is oversold. A reversal of a downtrend in price is likely, and the

FIGURE 4.42

Use of the 14-Day RSI
on the October 1997
Feeder Cattle Contract



analyst will start watching for bottoming action. Obviously, it is important to watch and see whether the rally is just a short-covering rally during a consolidation phase of a major downtrend. The patterns in open interest discussed earlier can be used in combination with the RSI to help ascertain whether the market actions are likely to be a bottom or just a consolidation phase.

The October feeder cattle chart, however, never records an RSI level of 30 and only occasionally records a level of 70. This suggests an obvious qualification of the measure. The 70 and 30 are general thresholds that may not hold for each commodity. More research is needed to optimize the thresholds by commodity, but not much work of this type is publicly available. Traders that have developed measures privately treat the information as proprietary. But observation will help. If you observed for a particular commodity that the futures tend to trade lower each time the 14-day RSI approaches 65, you might treat 65 as the "overbought" threshold (and watch to see if 35 works for an oversold status).

An alternative that many traders clearly prefer is to use a smaller number of days in the RSI calculation. A 9-day RSI is becoming widely used, and many software packages developed to analyze the markets allow you to set the length of the RSI and experiment. Figure 4.43 reports the same October 1997 feeder cattle chart with a 9-day RSI. Note it dips to the 30 threshold to indicate an oversold market on several occasions.

It is worth the effort. The RSI can provide significant help to traders looking to add discipline to their trading or price risk management program. Earlier, when discussing corrections, the possibility of panicky selling in a falling market (or panicky buying in a rising market) was introduced. Consider how much help might be accruing to the mental state of producers or other potential short hedgers when they see

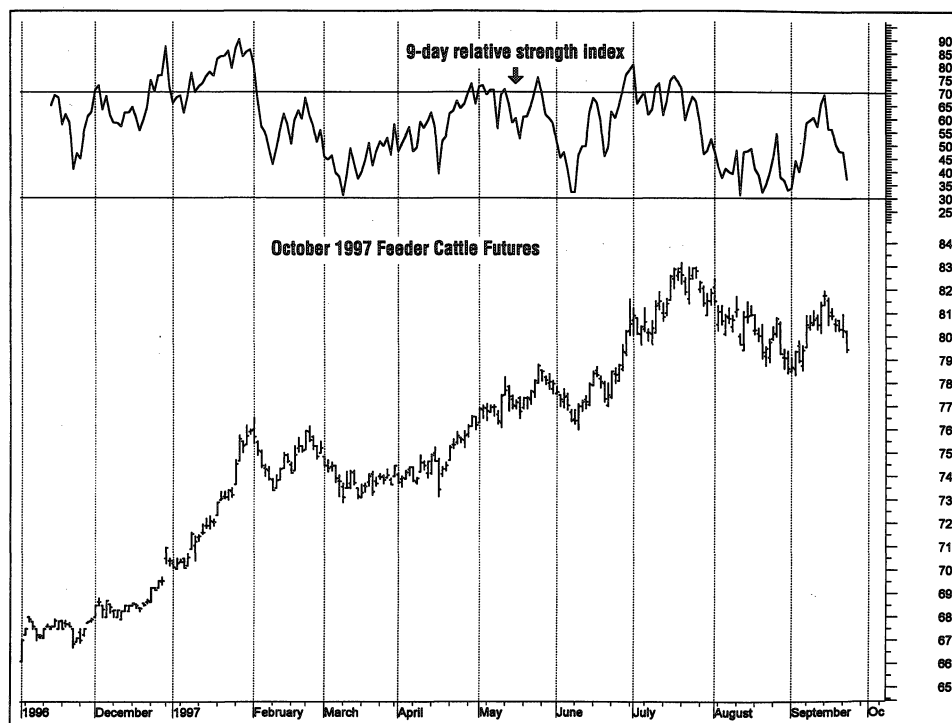


FIGURE 4.43
Use of the 9-Day RSI on
the October 1997
Feeder Cattle Contract

the RSI below 30 and realize the market is oversold—and due for a rally. It is a lot easier to stand firm, be disciplined, and wait for the price rally to do some forward-pricing when a powerful tool like the RSI is supporting and reinforcing your analysis. A corrective price rally is likely when the RSI confirms that the market is oversold, and reasonable pricing objectives can also be established by calculating the 38, 50, and 62 percent corrections.

As with other chart patterns or technical tools, it is important to remember that the guidelines offered by the RSI become something of a self-fulfilling prophecy. If enough traders monitor the RSI and are therefore reluctant to step up and sell an already oversold market, the market is less likely to crash and go still lower. On the other side of the issue, if the fundamental supply–demand situation changes significantly and continues to change, the market will defy the RSI. We have seen corn prices climb steadily for 6–10 weeks as a drought intensified and the 14-day RSI remained above 70 during the entire time period. *No technical tool or chart pattern can defy a sustained and significant change in the underlying supply–demand situation.* We have, in the form of the RSI, another confirmation that the technical dimensions of the market cannot and will not dictate price direction that is contrary to an emerging and significant change in the supply–demand fundamentals. But those major and unpredictable shocks to the supply–demand setting occur infrequently and this means the RSI will be a major aid most of the time.

By watching what is happening to the price action on the chart and the RSI, a top or bottom in the markets can often be anticipated or predicted. *A divergence between the price action and the action of the RSI is an important signal that a price-trend reversal is coming, and this pattern is particularly useful to the disciplined trader.*

The same October 1997 feeder cattle chart demonstrates a diverging pattern between price and the RSI. In mid-July, prices surged higher and moved up through the resistance plane just below \$82 at the late-June high. But the 14-day RSI, while above 70, did not make a new high in the mid-July action (Figure 4.42). *This divergence is powerful evidence that the market is at or close to a top, perhaps a major top.* The mid-July highs were, in late September, still the life-of-contract high.

Any pattern of divergence between price and the RSI that occurs above RSI values of 70 (in an uptrend) or below RSI values of 30 (in a downtrend) is extremely important. A pattern of divergence when the RSI values are between the 70 and 30 bounds should not be ignored, however. If the divergence occurs with RSI values in the mid-60s or the mid-30s, the behavior of the RSI can still be indicating that a top or bottom will develop.

The relative strength index is arguably the most important aid to the traders searching for help in bringing discipline to their trading programs. It is easier for the potential short hedger, for example, to avoid panicky selling of futures near the price lows when the RSI is suggesting the market will rally. The same assistance is present for the potential long hedger when an RSI above 70 suggests the market is overbought and that prices will not immediately move higher.

ANALYSIS OF THE 1996, 1997, 1998 CORN FUTURES

Technical analysis of the markets via the bar chart has been the focus of this chapter. Special attention has been paid to the buy and sell signals the chart patterns can gen-

erate. *There is a clear and intended implication that a disciplined trader who understands the basics in the art of chart analysis can be an effective selective hedger or speculator in the futures markets.*

Some traders are skeptical concerning the validity of technical analysis. At the more sophisticated level, the concerns are based on the notion that day-to-day changes in the markets are independent of each other. That independence, in turn, is based on the idea that the markets are efficient where the term *efficient* suggests that all available information is incorporated in the prices being discovered on any particular day. If the day-to-day changes are in fact independent over time, technical analysis of chart patterns will not work. The basic idea behind technical analysis is that what happened yesterday and on previous trading days will be a factor in determining what prices will do today and tomorrow.

The objective in this final section of the chapter, therefore, is to show you actual charts for corn for the 1996, 1997, and 1998 corn crops. Emphasis will be on the 1997 chart, but the discussion will be expanded to show the setting in which 1997 developments occurred and to discuss multiple-year hedging strategies when a bullish shock to the market occurs.

In late 1994, the USDA was considering whether to enforce a “set-aside” requirement for corn for the 1995 crop year. Ending stocks for the 1994–95 crop year had been boosted to estimates in the 1.4 to 1.5-billion-bushel range, a significant increase from the 686 million bushels in 1993–94. The flood-ravaged crop of 1993 was much smaller than usage, and stocks had been pulled down. Looking for the right balance between supply and demand to keep program costs in check, the USDA eventually announced a 7.5 percent set-aside requirement. This amounted to idling roughly 5 million acres.

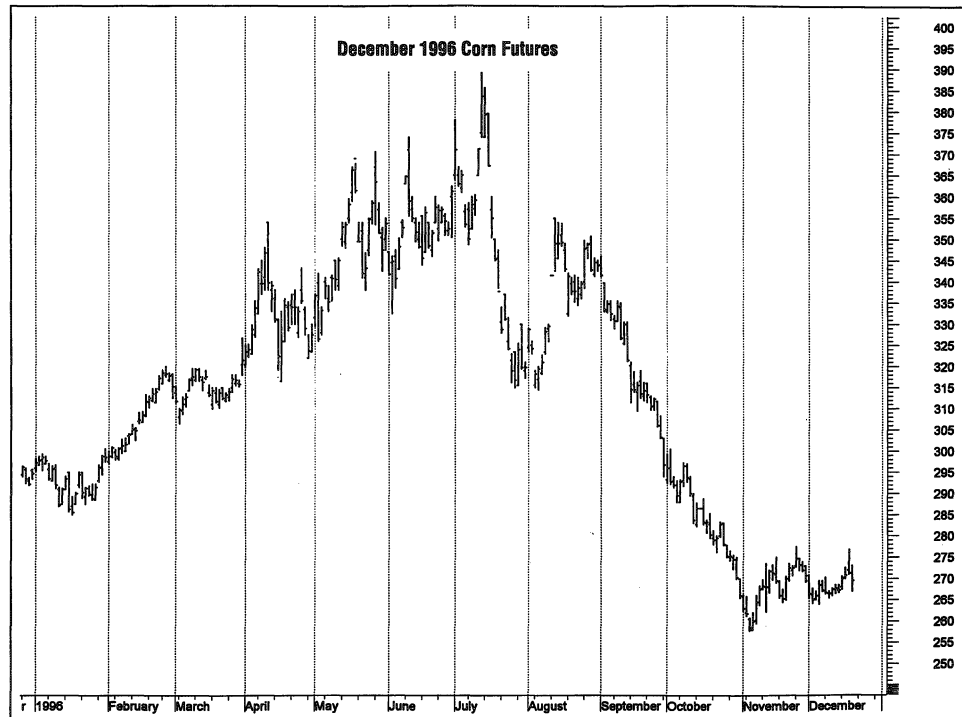
The 1995 crop was planted late due to wet conditions in the late spring months, encountered less than ideal weather during the summer months, and then saw the yields from a late-developing crop reduced by an early frost. Early (May) 1995 USDA supply–demand reports were projecting a cash-price range of \$2.30–2.70 for corn with ending stock estimates for the 1995–96 crop year at a relatively tight 998 million bushels. Farmers had reported plans to plant 75.3 million acres, less than many analysts had expected given the modest 7.5 percent set-aside requirement.

By December 1995, the 1995–96 ending stock estimates were down to 575 million and the cash-price range for the 1995–96 crop year was at \$2.95–3.35. Stocks were *very* tight, and only a large 1996 crop could bring relief. Acreage planted in 1995 had skidded to 71.2 million acres because of wet conditions, but the May 1996 supply–demand report estimated 1996 acreage at 81.0 million acres, an expanded acreage that would be expected to produce a crop near 9.375 billion bushels and restore an ending stock level of 762 million for the 1996–97 crop year. (The May report put the estimate of ending stocks for 1995–96, the crop year ending August 31, 1996, at an incredibly small 317 million bushels—a historic low.) There were concerns we would “run out” of corn, and the market made sure that did not really happen by discovering—eventually—record high prices to ration usage.

This was a powerful “laboratory” within which to apply and test technical analysis. The markets were to test your discipline as well. It is revealing to look at the technical dimensions on the charts and see how well they worked.

Figure 4.44, the December 1996 corn chart, shows the price ramifications of that short 1995 crop. Cash prices started to move up in January and February and pushed

FIGURE 4.44
December 1996 Corn
Futures



the new-crop December 1996 futures higher until mid-July. Cash prices were to eventually peak in August at levels above \$6 in some high-deficit areas where concentrated poultry firms were located. The futures market was in a “wait and see” mode during the important pollination period of July, and then it waited to see what the yield-influencing weather patterns of August would do.

In this supply-driven bull market, the December 1996 futures started to make new highs in February and March. Long hedges placed on the second consecutive close at new highs during February would have established cost protection near \$3.20. Much lower prices were available earlier during harvest of 1995. The moves on the preharvest futures such as the July were much more explosive, and long hedges would have been placed in those months to cover the intra-1996 needs. These long hedges would have been in place until a breakdown through the trend line on the chart during July would have generated a sell signal.

Short hedgers would have faced a more difficult management task. In April, May, and again in July, life-of-contract highs would have been “taken out” with two consecutive closes at new highs. Short hedges placed on rallies to those resistance planes should have been lifted (to be replaced on a rally to the new highs) or “marginied” via margin calls. Note that during July, before the break of the uptrend line, there is the classic failure referred to earlier in the chapter. There were two consecutive closes above the high near \$3.80 at the beginning of the month, but the close on the third day was not only very weak (near the low) but well below the old \$3.80 high. *This failure of the market to respond to the buy signal denoted by the two consecutive closes at new higher prices is extremely bearish—and is a sell signal of major proportions.* After an August correction of some 50 percent of the July price plunge, the contract moved down to the \$2.60–2.70 range in late harvest.

The insight and assistance in timing of pricing actions that can be gleaned from these charts could be repeated across the grains, the livestock futures, and the financial futures—across any of the commodities for which futures are traded. *It really does help to have a record of where the market has been, to be able to identify, even predict, changes in price direction, and to isolate reasonable and potentially attainable pricing objectives.* It is all logical, but it is not necessarily easy, and a caution is in order.

You would expect to see a relationship between the December 1996, 1997, and 1998 corn futures, and the relationship is definitely present. Remember, it is the production in calendar year 1996 that will be the corn stocks from which processing, exporting, feeding, and so on, is done until the harvest of 1997. If stocks are extremely tight, some corn can be imported from southern hemisphere producing countries where harvest is in March and April. Some of that was being done during the summer months of 1996 but not enough to change the supply–demand situation in the U.S. in any dramatic fashion. Until the corn crop is “made” in late summer of 1996 and stocks start to be replenished, the uncertainty in the marketplace will push price prospects for later years higher than normal.

The December 1997 corn chart in Figure 4.45 covers October 1, 1996, to late September 1997. Early-1996 developments looked very similar to those on the December 1996 chart. Summer 1996 highs moved above prior highs in February and March and price rallied through the summer months. The price boosting uncertainty for 1997 corn continued into September 1996, some two months after a price break on the December 1996 futures chart. The looming harvest was putting pressure on the 1996 corn prices—but the outlook for 1997 was still charged with uncertainty.

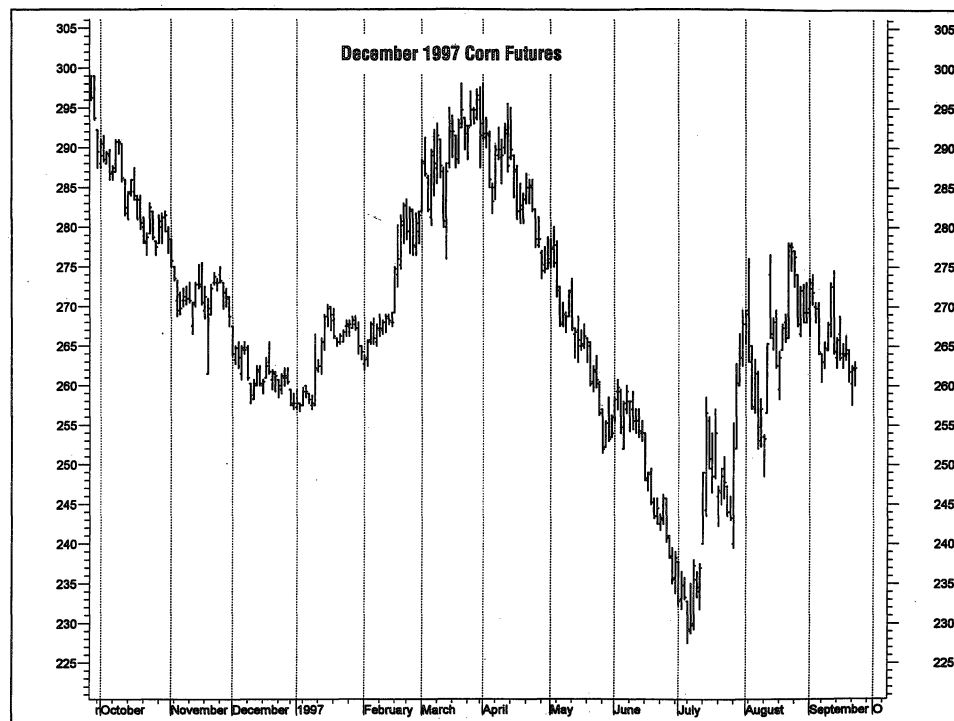


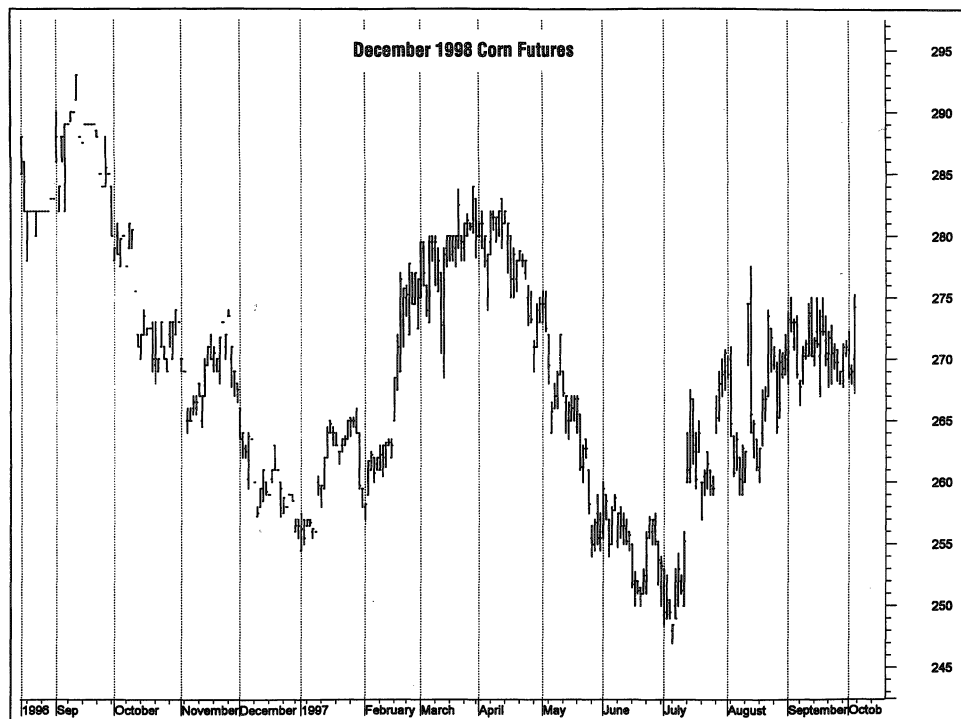
FIGURE 4.45
December 1997 Corn
Futures

The supply-driven bull markets will always create pricing opportunities for later crop years. You will want to watch for these often significant opportunities before the inevitable supply response has time to drive the market lower again.

It *is* the case that the impact of the partial crop failure diminishes as you look further ahead. The July 1996 corn futures (not shown) was still “rationing” the short 1995 crop via discovering prices that went as high as \$5.54, prices over \$1.50 above the highs on the December 1996 corn futures. The December corn futures, of course, were discovering price *after* the 1996 harvest, damping the impact of the very tight preharvest’s stocks. Note, too, that the 1997 chart showed price highs just above \$3.10—well below the \$3.90 levels on the 1996 chart and far below the record cash prices of the summer months of 1995. *But the impact was clearly still there: the best prices for the 1997 crop were offered in the late summer and early fall months of 1996.*

If you look still further ahead, into 1998, you would expect the impact of that short 1995 crop to be muted even further. It is, but the patterns remain. The December 1998 corn futures started trading in mid-August 1996 and recorded contract highs within the first few days of trading (Figure 4.46). This was the same month (September 1996) that showed the contract highs on the December 1997 chart. From that high until late September 1997, the 1997 and 1998 charts show similar patterns. The March-April price rally, the April-June price plunge, and the late summer rally are apparent on both charts. The September 1997 discovered prices for 1997 and 1998 corn were virtually identical.

FIGURE 4.46
December 1998 Corn
Futures



The three December corn futures charts, 1996, 1997, and 1998, clearly show a relationship. The possibility of multiple-year hedging emerges from that relationship. Techniques and how to pursue such strategies will be covered in later chapters. The intent here was to demonstrate how buy and sell signals on the closer charts in a time context, such as the 1996 corn, tend to prompt parallel moves on charts that are discovering prices for later years. Then, when the prices are pushed down by a supply response, it tends to happen on all of the charts.

The references at the end of the chapter by Kenyon and Beckman report on the effectiveness of this type of multiple-year strategy. They test a strategy that prices the crop for two years after the unusual market (1996 here) on the first signal back in 1996. Positions are placed in a late 1996 or 1997 futures and then “rolled” to the December 1998 contract at a later date. If you are interested in these multiple-year strategies, and you should be, the reports are worth requesting. Use the address or the e-mail address shown with the listing.

That’s where the chart analyst has an edge. There is a long historical record that shows the markets *do* fall after sell signals at trend lines, that they *do* try to correct to the gaps, and there is a long historical record that shows the market *will* run into strong selling on an approach to the gap. Unless you have compelling fundamental analysis to suggest prices above \$4 will in fact occur, evidence other than long-term forecasts of summer weather, the correct approach is to sell a close below an uptrend line or a corrective rally up toward a chart gap. But it is not easy to do, and we will return to this behavioral dimension often in later chapters as strategies are developed and explained.

LONG-TERM BAR CHARTS

The use of the bar chart will be demonstrated many times in later chapters. Before leaving this discussion, however, it is useful to discuss the long-term bar charts.

Most charts to this point are daily charts. The long-term corn chart was introduced briefly earlier. A weekly continuation or long-term chart can be constructed by taking the weekly high and low for the nearby futures and by using the close on Friday. When a particular futures contract matures and goes off the board during the week, the high and low from *both* the nearby contracts are used. To illustrate, assume the following high, low, and closing prices on Friday for the June and August live cattle futures during the week of June 18–22:

	June	August
High	\$75.60	\$74.80
Low	74.20	73.90
Close	75.30	74.50

On the weekly chart, the high for the June (\$75.60), the low for the August (\$73.90), and the close for the August (\$74.50) would be used. June matures on the 20th and is no longer traded, so attention switches to the August.

A monthly chart can be constructed in a similar fashion. The high and low for the nearby (or the two closest futures if the nearby is maturing) futures are used with the close the last day of the month. The result is a continuation chart that records a historical pattern over a number of years.

Many of the chart patterns that appear on the daily charts are important on the long-term charts. This is especially true of trend lines and resistance and support planes. Many traders watch the lows and highs on the monthly charts for support and resistance, respectively. It is not at all unusual to see a bottom on a daily chart at or near the long-term support plane or to see a top at the long-term resistance.

For a longer-term perspective, then, the weekly and monthly charts can be very valuable. Longer-term hedgers would get guidance from the weekly charts, and the monthly chart can help in placement of hedges and on longer-term speculative trades.

SUMMARY

Technical analysis is the key to the correct timing of buy and sell decisions in the commodity futures markets. The technical dimensions of the market do not dominate the fundamental supply–demand dimensions, and no sustained technical pattern will develop that is contrary to the emerging and underlying supply–demand balance. But the discovered price can and will move, and trace out technical patterns, as the market seeks to discover the price that balances the forces of supply and demand. Within the limits to those price moves, *technical analysis can be an important guide to the timing of pricing actions.*

The bar chart is the most widely employed guide to the commodity markets. Trend lines, resistance and support planes, and various topping or bottoming formations can be employed in monitoring the direction of price trends or even predicting changes in the direction of the trend. Consolidation patterns assist the trader in making the correct trades or in timing of makeup pricing actions if an earlier signal and opportunity were missed.

The integration of *chart gaps* and the *expectation of predictable market corrections* assists the trader in bringing discipline to the trading program. It is easier to wait, be patient, and avoid panicky actions if there is reason to expect the market to generate reasonable opportunities a bit later.

Volume and *open interest* are important complements to interpretation of the bar chart patterns. The *relative strength index* (RSI) is another aid that helps decision makers bring discipline to their pricing programs and to avoid mistakes in a market that is reaching extremes in terms of price movement.

Once the decision maker determines the probable *price range and direction of price trend* using fundamental analysis, then *technical analysis* can be very effective in guiding the timing of actions taken as the fundamental picture is traced out during the year or other decision period.

The patterns *do* emerge on real-world charts, and the assistance the charts are presumed to offer *is* present. In the final analysis, *it will be the level of discipline in following through with a market plan that will determine how effective the technical analysis of the markets will be.*

KEY POINTS

- The *trend line* is perhaps the most reliable bar chart indicator. Closes below an uptrend line or above a downtrend line are *reliable indicators of a change in price direction* and generate buy and sell signals for the hedger and speculator.

- In markets in which major price trends are not present, *resistance planes* and *support planes* become valuable guides to pricing actions. The *planes at contract highs and at contract lows* are especially important, and trading actions around those planes require *discipline and a preset plan*.
- A number of *topping and bottoming formations* are widely recognized. Among these are *double tops and bottoms*, *head-and-shoulders* formations, *key reversals*, and *island reversals*. All indicate a change in the direction of the price trend, and some offer a means of projecting the magnitude of the expected price move.
- *Chart gaps* and *price corrections* provide a base upon which traders can develop objectives for pricing actions.
- Various *consolidation patterns* appear on the chart. They are helpful in deciding whether the market is starting a top or bottom or is just “resting” before a renewed price move.
- *Trading volume is a measure of intensity* and all buy and sell signals will be more valid when they occur on unusually high trading volume.
- *Open interest* can signal a coming change in the market. *In general, increasing open interest is needed to sustain major price trends*.
- *The relative strength index (RSI)* is a reliable measure of momentum in the futures markets. *Recognizing that the market is oversold or overbought and is ready for a correction helps bring the patience and discipline that is often needed*.
- Examination of current bar charts *shows the formations* and confirms the usefulness of the charts in *guiding the timing of marketing and pricing actions*.

USEFUL REFERENCES

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- David Kenyon and Chuck Beckman, “Multiple Year Pricing Strategies for Soybeans,” Virginia Cooperative Extension Publication 448-023, Virginia Tech, Blacksburg, VA, 1996. Order by calling Extension Distribution Center at (540) 231-6192 or e-mail to purcell@vt.edu.
- David Kenyon and Chuck Beckman, “Multiple Year Pricing Strategies for Corn,” Virginia Cooperative Extension Publication 448-024, Virginia Tech, Blacksburg, VA, 1996. Order by calling Extension Distribution Center at (540) 231-6192 or e-mail to purcell@vt.edu.
- Jack D. Schwager, *Technical Analysis*, John Wiley & Sons, New York, 1996. The author demonstrates the way many of the technical dimensions of the market can be used in a disciplined trading program. Coverage includes oscillators, RSI, moving averages, and point and figure charting.
- J. Welles Wilder, *New Concepts in Technical Trading Systems*, Hunter Publishing, Winston Salem, NC, 1978. This reference covers the development of the RSI and other measures of momentum.

APPENDIX 4A. TYPES OF ORDERS AND DEMONSTRATIONS OF USE

Many orders and many combinations of orders can be used in trading commodity futures. In this appendix, the more standard orders will be defined and illustrated. The development assumes that the trader is acting as a producer and is employing a selective hedging program, which means an objective of having short hedges in place when the price trend is down and being a cash market speculator with no futures positions in place when the price trend turns up.

Market Order: An order to take a position “at the market.” The order would be written by the broker as

Sell 20 July wheat at the market.

The floor broker would sell 20,000 bushels of July wheat at the first available price offered by a buyer in the pits at the Chicago Board of Trade. Such an order would be used by the producer to hedge or forward-price 20,000 bushels of wheat when some preestablished pricing objective has been met.

Advantages of the order revolve around the assurance that the producer will get a “fill” and will be short in the market. The order would typically not be filled if the market is limit down and there are no willing buyers, but this is a rare occurrence.

The big disadvantage of the order is that the producer has no assurances as to the price levels at which the short positions will be established. If the order is placed with the broker with whom the producer is working when the July wheat is trading at \$4.10, it is very possible that the actual short positions acquired will be lower than the \$4.10 if the market conditions are volatile.

The market order should be used only when the trader feels that some action is imperative, and probably should not be used routinely in a selective hedging or other type of hedging program. The disadvantage of not having control over the entry-level price into the market is a serious shortcoming of the order.

Limit-Price Order: An order to take a position at a particular and specified price level or better. This order would be written as

Sell 20 July wheat at \$4.10.

A sell or short position for 20,000 bushels of July wheat will be established only if the order can be filled at \$4.10 or higher. While not always written that way, the order is interpreted in processing on the floor of the trading pits as “\$4.10 or better.” This is a widely used order in a scale-up pricing program such as

Sell 20 July wheat at \$4.10,
Sell 20 July wheat at \$4.20,
Sell 15 July wheat at \$4.30.

The orders could be placed with the broker on a “good ‘til canceled” basis (called GTC in the trade), and a total of 55,000 bushels of wheat would be hedged at prices from \$4.10 to \$4.30 if the market rallies to \$4.30.

The primary advantage of the order is that the entry level into the market is controlled in terms of price level.

The disadvantage of the order is that it may not be filled and if the markets then trade lower, there is no protection in place. The \$4.10 order will not be filled, of course, if the market never trades up to \$4.10. There is some possibility that the trading range for a particular day could show \$4.10 as the high for the day and the order may not be filled. It would have to trade at \$4.10 long enough for all sell orders to be filled, and there is no guarantee of that.

The order is widely used in trading and hedging programs and is an effective and desirable order in that it controls the price levels at which the producer is willing to enter the market. The opportunity to place the orders such that hedging is accomplished on a scale-up basis is especially attractive.

Sell-Stop Order: An order that becomes a market order if touched from above. The order would be written as

Sell 20 July wheat at \$3.95 stop.

In a selective hedging program, the producer might have reason to expect the market to move well above \$4.00, but wants to be protected if that analysis is wrong and the market turns lower. By placing a sell-stop order at prices below where the market is currently trading, the protection against lower prices is in place. The order is widely used, for example, under an uptrend line with the thought that if the market trades down through the trend line, the price direction is reversing and short hedges will be desired.

The advantage of the order is that it allows the producer to “trail” an upward-trending market and be in a position to benefit from higher prices, but be protected if the market does turn unexpectedly lower. Like any order, the sell-stop can be placed on a “day” basis (which means it would have to be put in again the next day if desired) or on a GTC basis and moved up under an upward-trending market every day or every few days.

Among the disadvantages is the fact that the order becomes a market order when touched from above. It could be filled at levels below the price specified in a volatile market.

A second disadvantage is that the order offers no protection and can give unexpected fills to the beginning trader who does not fully understand the markets. For example, assume that the market shows a low of \$3.97 on Thursday and an important and bearish report comes out after the market closes on Thursday afternoon. If the market opens sharply lower on Friday morning at \$3.81, a sell-stop order at \$3.95 that is placed on a GTC basis on Thursday is still in effect and would be filled at the first opportunity around \$3.81.

The sell-stop order can be an effective order if it is fully understood. *It is appealing to be able to “trail” an upward-trending market and be in position to set short hedges if the market turns unexpectedly lower.*

Buy-Stop Order: An order which becomes a market order if touched from below. The order would be written as

Buy 20 July wheat at \$4.19 stop.

Widely used by speculators who have short positions in the market and who want to limit their risk exposure if the market moves up against a short position, the order has a place in the marketing program for a selective hedger. For example,

assume 20,000 bushels of July wheat were sold because the life-of-contract high was at \$4.14 and the producer sold a rally toward that level with a limit-price sell order at \$4.10. If the market trades as high as \$4.19 and makes new contract highs, it is likely to trade sharply higher. The producer might wish to limit margin calls and be in a position to benefit from higher prices as a cash market speculator. A buy-stop order at \$4.19 would offset or lift the short hedges if the market trades up to the \$4.19 level.

The advantage of the order is that it allows placing a limit on the exposure from short hedge positions. For a selective hedger, this can be an important feature.

The disadvantages are the same as those for the sell-stop order. When the specified price level is touched from below, the order becomes a market order and might be filled at higher price levels. And if the market “gaps” higher due to a report and opens at \$4.35, to continue the earlier example, the buy-stop order that is placed on a GTC basis at \$4.19 will be filled near \$4.35. The objective of limiting exposure from the short hedge positions is not met.

Buy-stop orders can be effective in selective hedging programs. They should not be placed so close to current trading levels, however, that the producer is constantly trading in and out of the market and is behaving more nearly like a speculator in futures.

Sell-Stop-Close Order: An order that will be filled only if the market closes below a specified price level. The order is written as

Sell 20 July wheat at \$3.95 stop-close-only.

The order would be filled at the close of trade for the day if the close is below \$3.95. The order is widely used by traders, including short hedgers, who wish to take a position in the market only if the market closes below some preselected level. The idea is that it is not where the market *trades* but where it *closes* that is important. For example, a regular sell-stop order that is being moved up under an uptrend line every few days will be filled if the market darts down through the trend line and touches the order from above even if the market then turns and closes sharply higher for the day. A short hedge placed under those conditions will not look attractive to the selective hedger.

The advantage of the order, therefore, is that it is filled based on the close of trading. As suggested, it is the close that is often viewed as the important signal for action in a selective hedging program.

The disadvantage is the same as any sell-stop order. It can be filled at a close that is well below the specified price level. On a day that the market closes limit down, the order will not usually be filled, of course. An important caution is in order here. The “sell-stop-close-only” order will not be accepted at all exchanges. The Chicago Board of Trade may not accept the order for the grain and oilseed contracts, even though the illustrations here are for wheat contracts. The Kansas City Board of Trade may take the order for its hard red winter wheat contracts. The Chicago Mercantile Exchange will accept the order for the livestock commodities. If the exchange will not accept the order, the only alternative is to have the broker enter a market order or a limit-price order near the close of the trading day and effectively accomplish the same thing. You should check with your broker to make sure that the order will be accepted by the particular exchange involved for various futures instruments.

Buy-Stop-Close-Only Order: An order that will be filled at the close of trade for the day if the close is above a specified price level. The order will be written as

Buy 20 July wheat at \$4.19 stop-close-only.

Clearly, the order is superior to the buy-stop order if attention is being paid to the close rather than to the trading range for the day. A regular buy-stop at \$4.19 would lift a short hedge that the producer would want to be in place if the market trades up to the \$4.19 level and then turns and closes sharply lower for the day. The above order at \$4.19 on a stop-close-only order would *not* lift the short hedge, of course, unless the market *closes* above \$4.19. A review of a key-reversal top will quickly show the advantage of not lifting short hedges via a buy-stop order when the market then *closes* lower.

The advantage is that the focus of the order is on where the market closes. The disadvantage is that the fill could be well above the specified price level of \$4.19 if the market does surge and close sharply higher on the day.

The same caution is in order: Not all exchanges will accept the stop-close-only orders, whether they are sell-stop or buy-stop orders.

Extensions and Constraints in Orders: Several constraints or conditions can be placed on the standard set of orders or used to enhance their effectiveness. The most widely used are discussed here.

1. *Market If Touched (MIT)*. This condition converts a limit-price order, for example, to a market order. If the pricing objective of the producer is \$79.50 in June live cattle, the MIT provision added to a sell order at \$79.50 will help to ensure the order will be filled. The order becomes a market order if the \$79.50 level is touched, and this protects against the possibility of the market showing a \$79.50 high for the day but leaving some orders to sell at \$79.50 unfilled. Fills will typically be at or near the specified \$79.50 level because the order will be filled quickly and there is no time lag involved like there is in getting a regular market order into the trading pits. The order may not be accepted by the Chicago Board of Trade on the grains. Again, check with your broker.
2. *Good 'Til Canceled (GTC)*. Discussed earlier, the GTC provision keeps the order in place until it is filled or canceled. It eliminates the need, for example, to keep placing the same order every day. A sell order on July wheat at \$4.30 that has the GTC provision will be there and waiting on any rally that comes in the market up to the \$4.30 level. Any order that does not have the GTC provision is canceled automatically at the end of each trading day if it has not been filled. Most brokerage firms cancel the GTC orders that have not been filled at the end of each month, however, and they would then have to be replaced. Check with your broker.
3. *One Cancels the Other (OTO)*. Used when two orders are in place, the provision cancels one of the orders when one has been filled. For example, the producer might have in place at the same time a limit-price order such as "sell 20 July wheat at \$4.10" and a stop order such as "sell 20 July wheat at \$3.95 stop." The idea is to either sell on a rally to \$4.10 and get hedges placed or sell at \$3.95 via a sell-stop if the market turns lower rather than rallying to the \$4.10 objective. If the \$4.10 order is filled, the \$3.95 stop order is automatically canceled and the

producer does not face the risk of selling more than had been planned and at two price levels.

4. *Time Constraints.* Virtually any order can be placed such that it is canceled if not filled by a particular time. A limit-price order to sell June live cattle at \$79.50 could be placed so that it is canceled if not filled by 12:55 p.m. Central Time of a particular day. The producer might reason that if the market rallies near the close of the trading period, then still higher prices are likely the next day and they might not want the sell order filled in the last few minutes of trading. This is sometimes called a “fill or kill” provision in trade jargon.
5. *Price Constraints.* A constraint or limit can be placed on an order such as a “sell 10 June live cattle at \$79.50 stop.” If the producer does not want to see fills well below the \$79.50 level as the order is converted to a market order in a downward-moving market, a “limit” of \$79.40 can be placed on the fill for the order. This provision can be especially useful in a thinly traded market or a thinly traded distant futures contract where a significant increment of price move might be required to find someone who is willing to take the other side of the trade. The Chicago Board of Trade may not accept the use of “stop-limit” orders. Check with your broker.

The primary message here is that the trader must understand basic orders and be able to use them if the program is to be effective. Regardless of which orders are used, it is important to keep records on a day-to-day basis so that the producer is constantly aware of what active orders they have in the markets and make necessary adjustments over time. *It is always a good idea to discuss the order with the broker so both parties are sure that the order being placed by the broker is consistent with what the trader wants to do.*