The ULTIMATE Technical Analysis HANDBOOK

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Elliott Wave International eCourse Book

The Ultimate Technical Analysis Handbook

Excerpted from *The Traders Classroom Collection Volumes 1-4* eBooks

By Jeffrey Kennedy, Elliott Wave International

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Chapter 1 — How the Wave Principle Can Improve Your Trading

Every trader, every analyst and every technician has favorite techniques to use when trading. But where traditional technical studies fall short, the Wave Principle kicks in to show high probability price targets. Just as important, it can distinguish high probability trade setups from the ones that traders should ignore.

Where Technical Studies Fall Short

There are three categories of technical studies: trend-following indicators, oscillators and sentiment indicators. Trend-following indicators include moving averages, Moving Average Convergence-Divergence (MACD) and Directional Movement Index (ADX). A few of the more popular oscillators many traders use today are Stochastics, Rate-of-Change and the Commodity Channel Index (CCI). Sentiment indicators include Put-Call ratios and Commitment of Traders report data.

Technical studies like these do a good job of illuminating the way for traders, yet they each fall short for one major reason: they limit the scope of a trader's understanding of current price action and how it relates to the overall picture of a market. For example, let's say the MACD reading in XYZ stock is positive, indicating the trend is up. That's useful information, but wouldn't it be more useful if it could also help to answer these questions: Is this a new trend or an old trend? If the trend is up, how far will it go? Most technical studies simply don't reveal pertinent information such as the maturity of a trend and a definable price target – but the Wave Principle does.

How Does the Wave Principle Improve Trading?

Here are five ways the Wave Principle improves trading:

1. *Identifies Trend*

   The Wave Principle identifies the direction of the dominant trend. A five-wave advance identifies the overall trend as up. Conversely, a five-wave decline determines that the larger trend is down. Why is this information important? Because it is easier to trade in the direction of the dominant trend, since it is the path of least resistance and undoubtedly explains the saying, "the trend is your friend." Simply put, the probability of a successful commodity trade is much greater if a trader is long Soybeans when the other grains are rallying.

2. *Identifies Countertrend*

   The Wave Principle also identifies countertrend moves. The three-wave pattern is a corrective response to the preceding impulse wave. Knowing that a recent move in price is merely a correction within a larger trending market is especially important for traders, because corrections are opportunities for traders to position themselves in the direction of the larger trend of a market.

3. *Determines Maturity of a Trend*

As Elliott observed, wave patterns form larger and smaller versions of themselves. This repetition in form means that price activity is fractal, as illustrated in Figure 1. Wave (1) subdivides into five small waves, yet is part of a larger five-wave pattern. How is this information useful? It helps traders recognize the maturity of a trend. If prices are advancing in wave 5 of a five-wave advance for example, and wave 5 has already completed three or four smaller waves, a trader knows this is not the time to add long positions. Instead, it may be time to take profits or at least to raise protective stops.

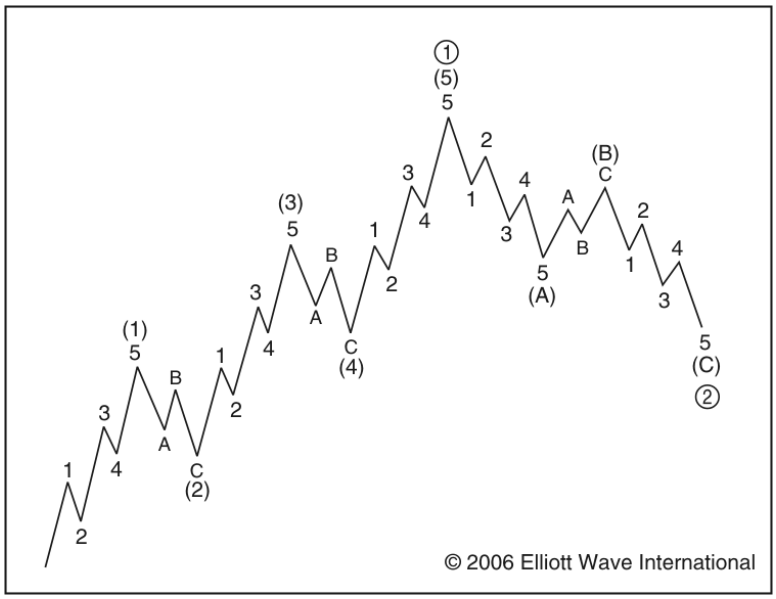

Figure 1

Since the Wave Principle identifies trend, countertrend, and the maturity of a trend, it's no surprise that the Wave Principle also signals the return of the dominant trend. Once a countertrend move unfolds in three waves (A-B-C), this structure can signal the point where the dominant trend has resumed, namely, once price action exceeds the extreme of wave B. Knowing precisely when a trend has resumed brings an added benefit: It increases the probability of a successful trade, which is further enhanced when accompanied by traditional technical studies.

4. *Provides Price Targets*

What traditional technical studies simply don't offer — high probability price targets — the Wave Principle again provides. When R.N. Elliott wrote about the Wave Principle in Nature's Law, he stated that the Fibonacci sequence was the mathematical basis for the Wave Principle. Elliott waves, both impulsive and corrective, adhere to specific Fibonacci proportions in Figure 2. For example, common objectives for wave 3 are 1.618 and 2.618 multiples of wave 1. In corrections, wave 2 typically ends near the .618 retracement of wave 1, and wave 4 often tests the .382 retracement of wave 3. These high probability price targets allow traders to set profit-taking objectives or identify regions where the next turn in prices will occur.

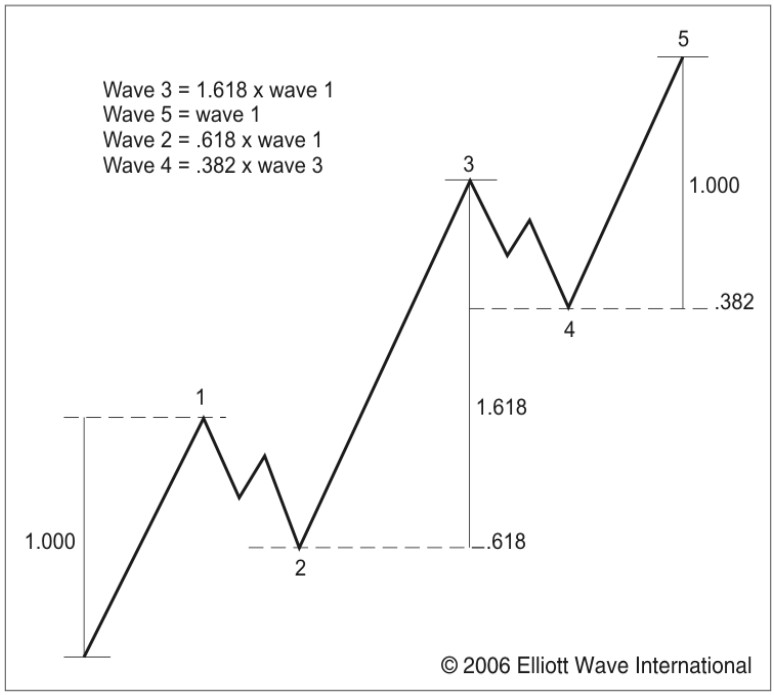

Figure 2

5. *Provides Specific Points of Ruin*

   At what point does a trade fail? Many traders use money management rules to determine the answer to this question, because technical studies simply don't offer one. Yet the Wave Principle does — in the form of Elliott wave rules.

   Rule 1: Wave 2 can never retrace more than 100% of wave 1.

   Rule 2: Wave 4 may never end in the price territory of wave 1.

   Rule 3: Out of the three impulse waves — 1, 3 and 5 — wave 3 can never be the shortest.

   A violation of one or more of these rules implies that the operative wave count is incorrect. How can traders use this information? If a technical study warns of an upturn in prices, and the wave pattern is a second-wave pullback, the trader knows specifically at what point the trade will fail – a move beyond the origin of wave 1. That kind of guidance is difficult to come by without a framework like the Wave Principle.

What Trading Opportunities Does the Wave Principle Identify?

Here's where the rubber meets the road. The Wave Principle can also identify high probability trades over trade setups that traders should ignore, specifically by exploiting waves (3), (5), (A) and (C).

Why? Since five-wave moves determine the direction of the larger trend, three-wave moves offer traders an opportunity to join the trend. So in Figure 3, waves (2), (4), (5) and (B) are actually setups for high probability trades in waves (3), (5), (A) and (C).

For example, a wave (2) pullback provides traders an opportunity to position themselves in the direction of wave (3), just as wave (5) offers them a shorting opportunity in wave (A). By combining the Wave Principle with traditional technical analysis, traders can improve their trading by increasing the probabilities of a successful trade.

Technical studies can pick out many trading opportunities, but the Wave Principle helps traders discern which ones have the highest probability of being successful. This is because the Wave Principle is the framework that provides history, current information and a peek at the future. When traders place their technical studies within this strong framework, they have a better basis for understanding current price action.

[JULY 2005]

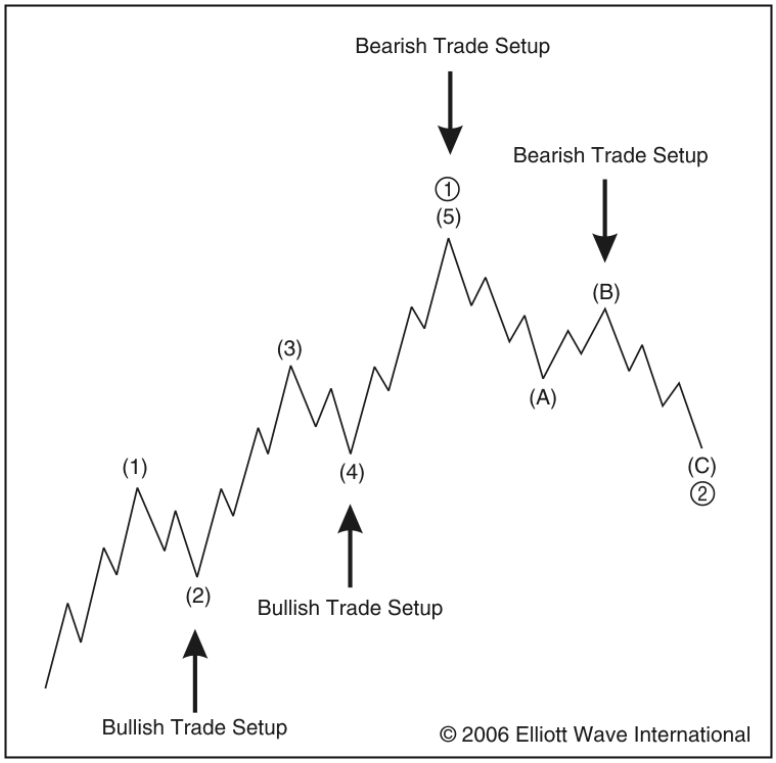

Figure 3

Chapter 2 — How To Confirm You Have the Right Wave Count

The Wave Principle describes 13 wave patterns – not to mention the additional patterns they make when combined. With so many wave patterns to choose from, ***how do you know if you are working the right wave count?*** Usually, the previous wave in a developing pattern gives the Elliott wave practitioner an outline of what to expect (i.e., wave 4 follows wave 3, and wave C follows wave B). But only after the fact do we know with complete confidence which kind of wave pattern has just unfolded. So as patterns are developing, we are faced with questions like these: It looks like a five-wave advance, but is it wave A, 1 or 3? Here's a three-wave move, but is it wave A, B or X?

How can we tell the difference between a correct and an incorrect labeling? The obvious answer is that prices will move in the *direction* you expect them to. However, the more useful answer to this question, I believe, is that prices will move in the *manner* they are supposed to. For example, within a five-wave move, if wave three doesn't travel the farthest in the shortest amount of time, then odds are that the labeling is incorrect. Yes, I know that sometimes first waves extend and so do fifth waves (especially in commodities), but most typically, prices in third waves travel the farthest in the shortest amount of time. In other words, *the personality of price action will confirm your wave count*.

Each Elliott wave has a distinct personality that supports its labeling. As an example, second waves are most often deep and typically end on low volume. So if you have a situation where prices have retraced a .382 multiple of the previous move and volume is high, odds favor the correct labeling as wave B of an A-B-C correction and not wave 2 of a 1-2-3 impulse. Why? Because what you believe to be wave 2 doesn't have the personality of a corrective wave 2.

Prechter and Frost's *Elliott Wave Principle* describes the personality of each Elliott wave (see EWP, pp. 78-84). But here's a shortcut for starters: Before you memorize the personality of each Elliott wave, learn the overall personalities of impulse and corrective waves:

- **Impulse waves** always subdivide into five distinct waves, and they have an energetic personality that likes to cover a lot of ground in a short time. That means that prices travel far in a short period, and that the angle or slope of an impulse wave is steep.
- **Corrective waves** have a sluggish personality, the opposite of impulse waves. They are slow-moving affairs that seemingly take days and weeks to end. During that time, price tends not to change much. Also, corrective wave patterns tend to contain numerous overlapping waves, which appear as choppy or sloppy price action.

To apply this "wave personality" approach in real time, let's look at two daily price charts for Wheat, reprinted from the August and September 2005 issues of *Monthly Futures Junctures*.

Figure 4 from August shows that I was extremely bearish on Wheat at that time, expecting a massive selloff in wave three-of-three. Yet during the first

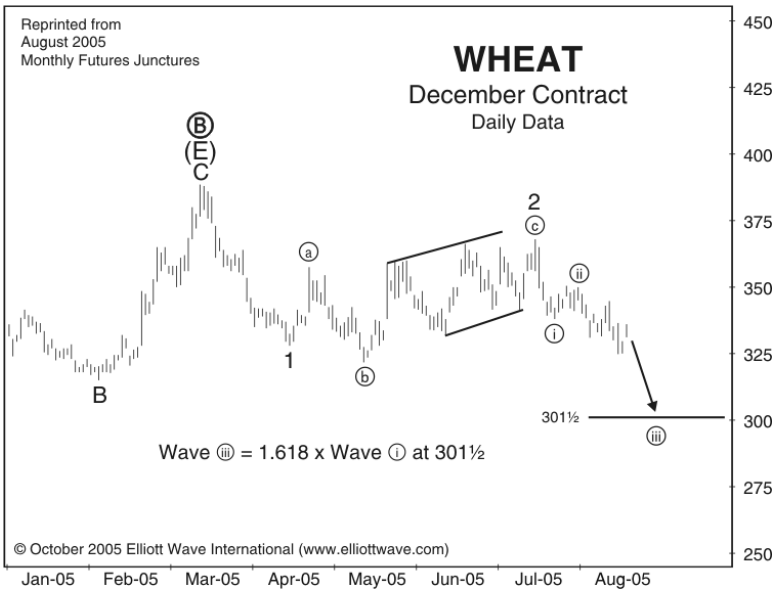

Figure 4

few weeks of September, the market traded lackadaisically. Normally this kind of sideways price action would have bolstered the bearish labeling, because it's typical of a corrective wave pattern that's fighting the larger trend. However, given my overriding one-two, one-two labeling, we really should have been seeing the kind of price action that our wave count called for: sharp, steep selling in wave three-of-three.

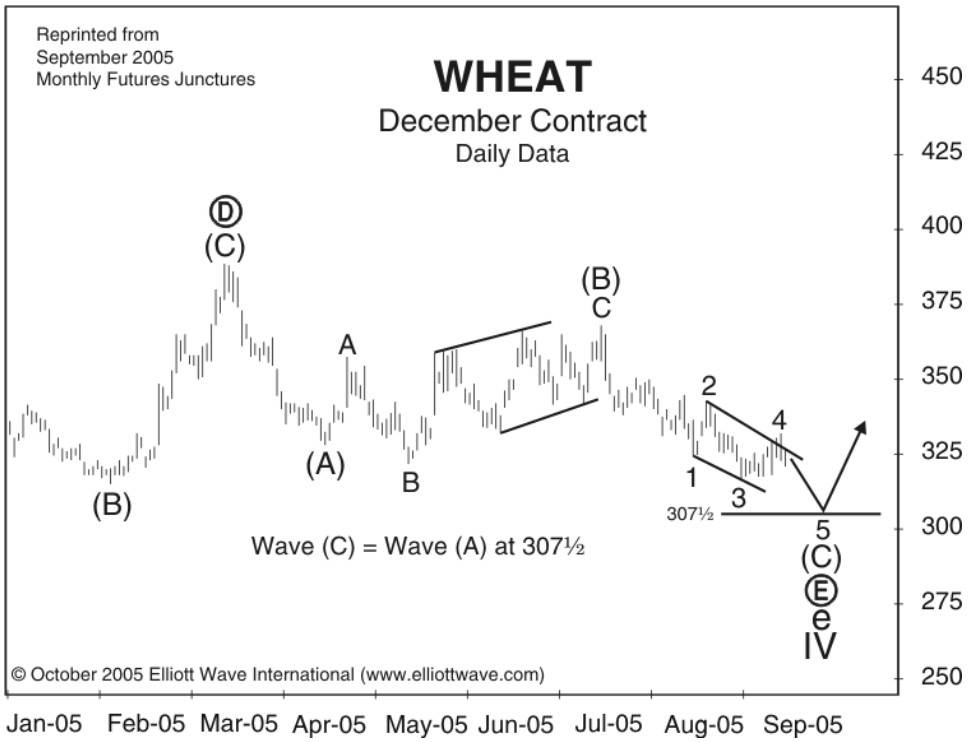

Figure 5

It was precisely because I noticed that the personality of the price action didn't agree with the labeling that I decided to rework my wave count. You can see the result in Figure 5, which calls for a much different outcome from the one forecast by Figure 4. In fact, the labeling in Figure 5 called for a bottom to form soon, followed by a sizable rally. Even though the moderate new low I was expecting did not materialize, the sizable advance did: In early October 2005, Wheat rallied as high as 353.

So that's how I use personality types to figure out whether my wave labels are correct. If you follow the big picture of energetic impulse patterns and sluggish corrective patterns, it should help you match price action with the appropriate wave or wave pattern.

[OCTOBER 2005]

Chapter 3 — How To Integrate Technical Indicators Into an Elliott Wave Forecast

1. How One Technical Indicator Can Identify Three Trade Setups

I love a good love-hate relationship, and that's what I've got with technical indicators. Technical indicators are those fancy computerized studies that you frequently see at the bottom of price charts that are supposed to tell you what the market is going to do next (as if they really could). The most common studies include MACD, Stochastics, RSI and ADX, just to name a few.

The No. 1 (and Only) Reason To Hate Technical Indicators

I often hate technical studies because they divert my attention from what's most important – PRICE.

Have you ever been to a magic show? Isn't it amazing how magicians pull rabbits out of hats and make all those things disappear? Of course, the "amazing" is only possible because you're looking at one hand when you should be watching the other. Magicians succeed at performing their tricks to the extent that they succeed at diverting your attention.

That's why I hate technical indicators; they divert my attention the same way magicians do. Nevertheless, I have found a way to live with them, and I do use them. Here's how: Rather than using technical indicators as a means to gauge momentum or pick tops and bottoms, I use them to identify potential trade setups.

Three Reasons To Learn To Love Technical Indicators

Out of the hundreds of technical indicators I have worked with over the years, my favorite study is MACD (an acronym for Moving Average Convergence-Divergence). MACD, which was developed by Gerald Appel, uses two exponential moving averages (12-period and 26-period). The difference between these two moving averages is the MACD line. The trigger or Signal line is a 9-period exponential moving average of the MACD line (usually seen as 12/26/9…so don't misinterpret it as a date). Even though the standard settings for MACD are 12/26/9, I like to use 12/25/9 (it's just me being different). An example of MACD is shown in Figure 6 (Coffee).

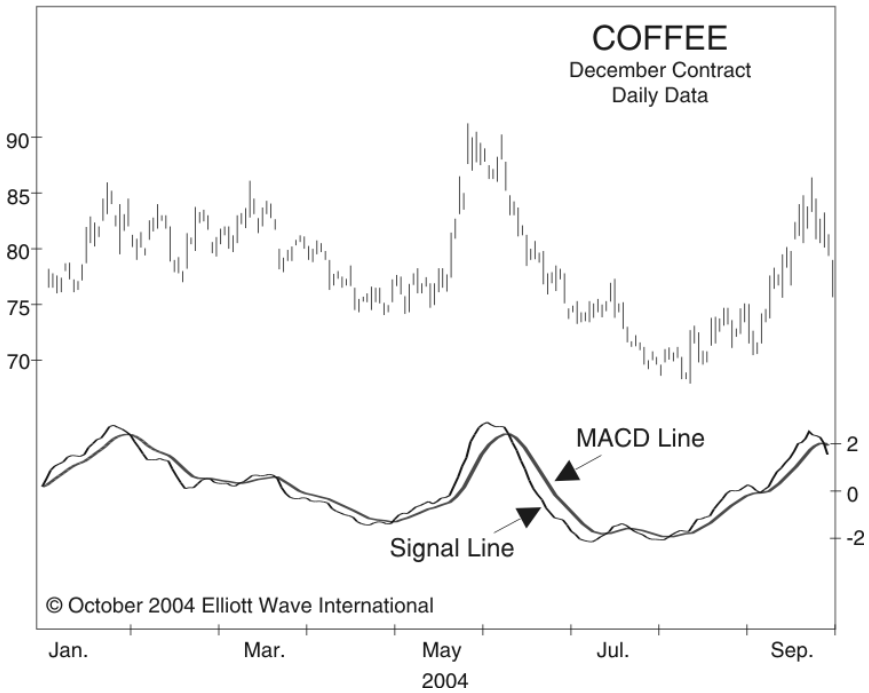

Figure 6

The simplest trading rule for MACD is to buy when the Signal line (the thin line) crosses above the MACD line (the thick line), and sell when the Signal line crosses below the MACD line. Some charting systems (like Genesis or CQG) may refer to the Signal line as MACD and the MACD line as MACDA. Figure 7 (Coffee) highlights the buy-and-sell signals generated from this very basic interpretation.

Although many people use MACD this way, I choose not to, primarily because MACD is a trend-following or momentum indicator. An indicator that follows trends in a sideways market (which some say is the state of markets 80% of time) will get you killed. For that reason, I like to focus on different information that I've observed and named: Hooks, Slingshots and Zero-Line Reversals. Once I explain these, you'll understand why I've learned to love technical indicators.

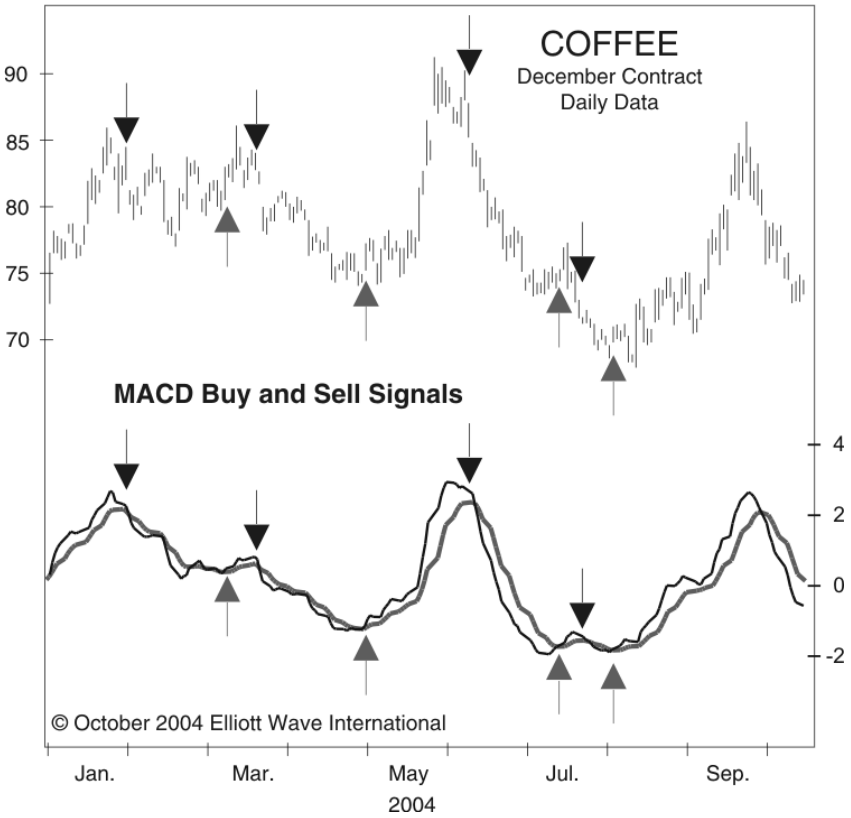

Figure 7

• ***Hooks***

A Hook occurs when the Signal line penetrates, or attempts to penetrate, the MACD line and then reverses at the last moment. An example of a Hook is illustrated in Figure 8 (Coffee).

I like Hooks because they fit my personality as a trader. As I have mentioned before, I like to buy pullbacks in uptrends and sell bounces in downtrends (See p. 5 of *Trader's Classroom Collection: Volume I*). And Hooks do just that – they identify countertrend moves within trending markets.

In addition to identifying potential trade setups, you can also use Hooks as confirmation. Rather than entering a position on a crossover between the Signal line and MACD line, wait for a Hook to occur to provide confirmation that a trend change has indeed occurred. Doing so increases your confidence in the signal, because now you have two pieces of information in agreement.

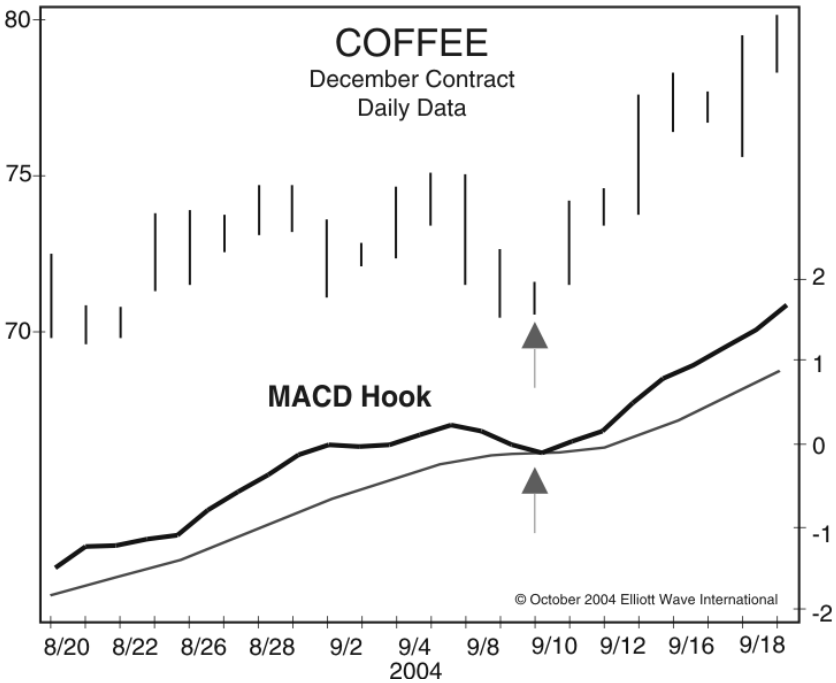

Figure 8

Figure 9 (Live Cattle) illustrates exactly what I want this indicator to do: alert me to the possibility of rejoining the trend. In Figure 10 (Soybeans), I highlight two instances where the Hook technique worked and two where it didn't.

But is it really fair to say that the signal didn't work? Probably not, because a Hook should really just be a big red flag, saying that the larger trend may be ready to resume. It's not a trading system that I blindly follow. All I'm looking for is a heads-up that the larger trend is possibly resuming. From that point on, I am comfortable making my own trading decisions. If you use it simply as an alert mechanism, it does work 100% of the time.

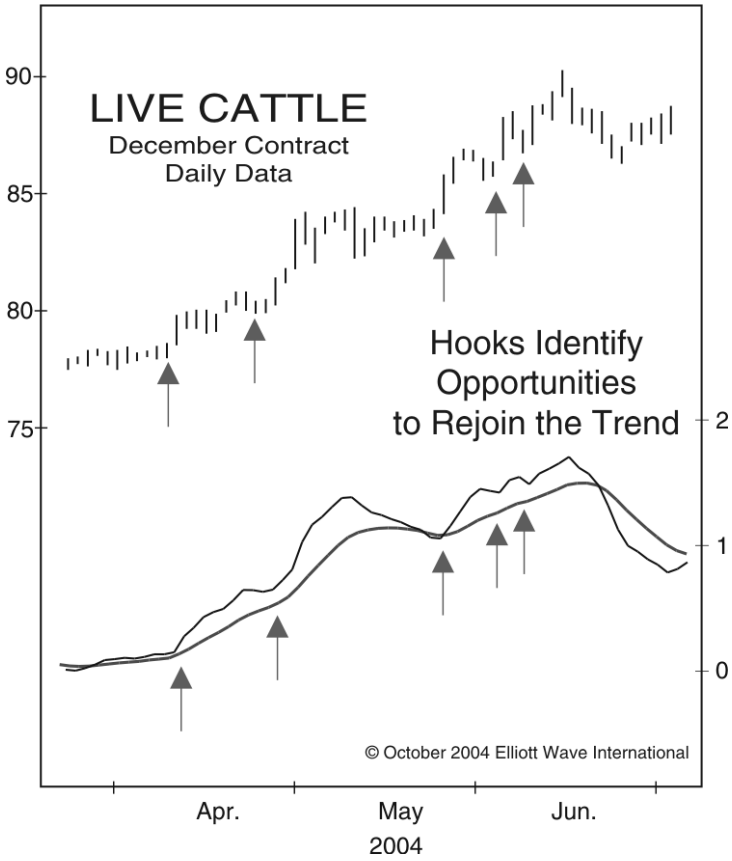

Figure 9

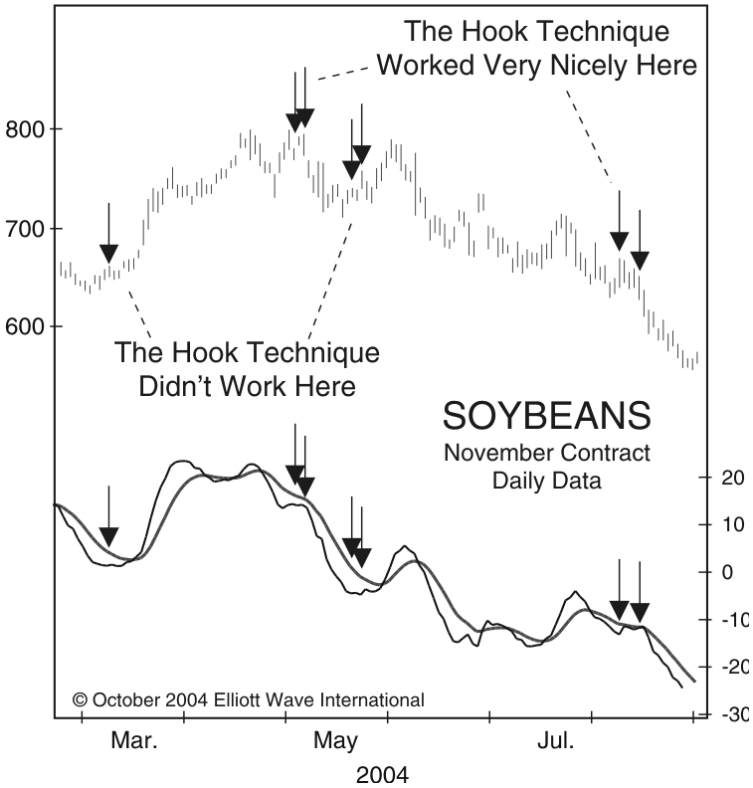

Figure 10

• ***Slingshots***

Another pattern I look for when using MACD is called a Slingshot. To get a mental picture of this indicator pattern, think the opposite of divergence. Divergence occurs when prices move in one direction (up or down) and an indicator based on those prices moves in the opposite direction.

A bullish Slingshot occurs when the current swing low is above a previous swing low (swing lows or highs are simply previous extremes in price),while the corresponding readings in MACD are just the opposite. Notice in Figure 11 (Sugar) how the May low was above the late March swing low. However, in May, the MACD reading fell below the level that occurred in March. This is a bullish Slingshot, which usually identifies a market that is about to make a sizable move to the upside (which Sugar did).

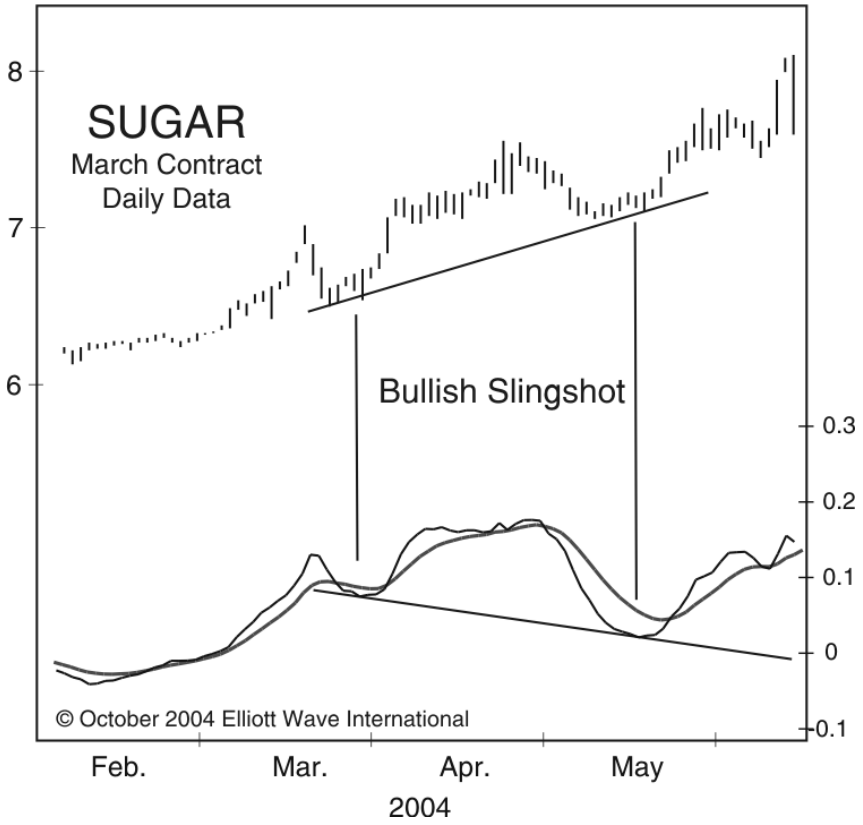

Figure 11

A bearish Slingshot is just the opposite: Prices make a lower swing high than the previous swing high, but the corresponding extreme in MACD is above the previous extreme. Figure 12 (Soybeans) shows an example of a bearish Slingshot.

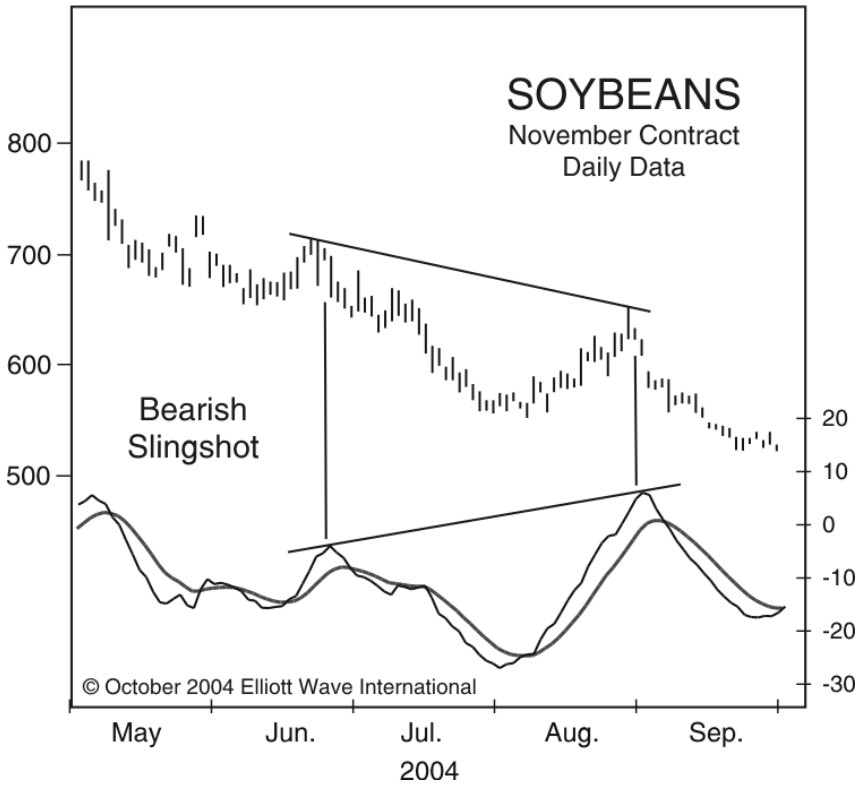

Figure 12

• *Zero-Line Reversals*

The final trade setup that MACD provides me with is something I call a Zero-Line Reversal(ZLR). A Zero-Line Reversal occurs when either the Signal line or the MACD line falls (or rallies) to near zero, and then reverses. It's similar in concept to the hook technique described above. The difference is that instead of looking for the Signal line to reverse near the MACD line, you're looking for reversals in either the Signal line or the MACD line near zero. Let's look at some examples of Zero-Line Reversals and I'm sure you'll see what I mean.

In Figure 13 (Sugar), you can see two Zero-Line Reversals. Each time, MACD reversed above the zero-line, which means they were both bullish signals. When a Zero-Line Reversal occurs from below, it's bearish. Figure 14 (Soybeans) shows an example of one bullish ZLR from above, and three bearish reversals from below. If you recall what happened with Soybeans in September 2005, the bearish ZLR that occurred early that month was part of our bearish Slingshot from Figure 12. These combined signals were a great indication that the August advance was merely a correction within the larger sell-off that began in April. That meant that lower prices were forthcoming, as forecast in the August and September issues of *Monthly Futures Junctures.*

So there you have it, a quick rundown on how I use MACD to alert me to potential trading opportunities (which I love). Rather than using MACD as a mechanical buy-sell system or using it to identify strength or weakness in a market, I use MACD to help me spot trades. And the Hook, Slingshot and Zero-Line Reversal are just a few trade setups that MACD offers.

[OCTOBER 2004]

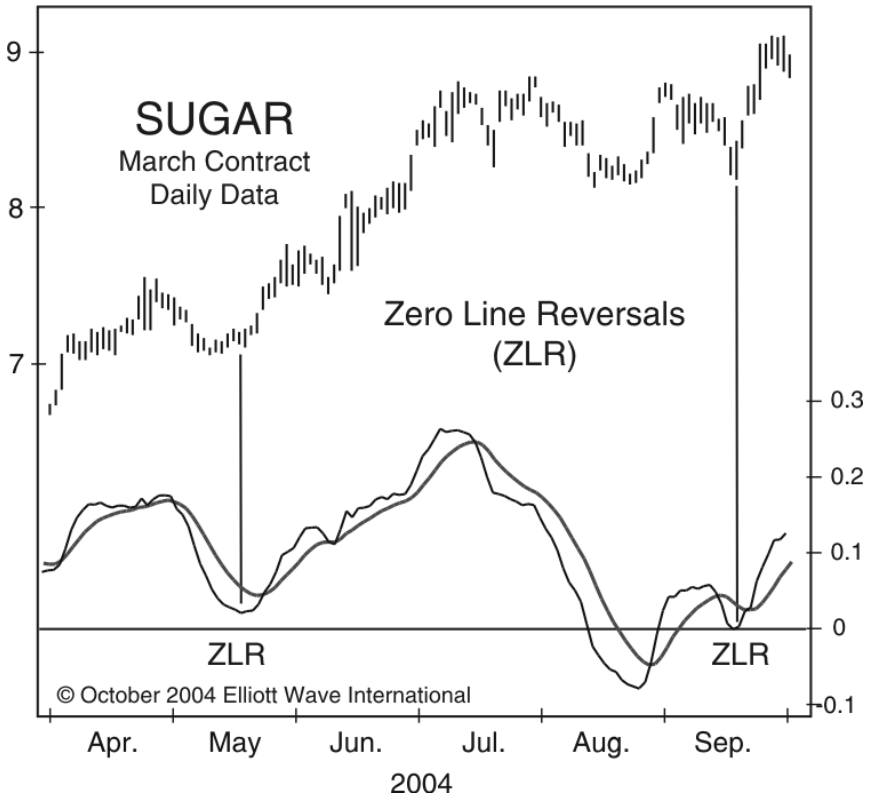

Figure 13

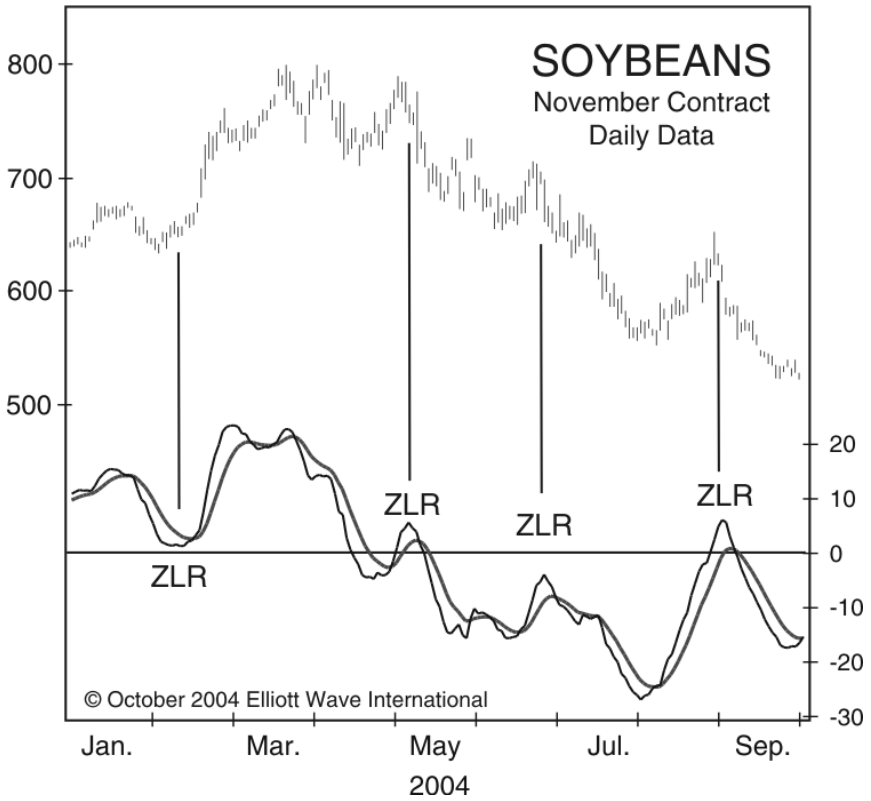

Figure 14

2. How To Use Technical Indicators To Confirm Elliott Wave Counts

Top Reason To Love Technical Indicators

The previous lesson points out one of the redeeming features of technical studies: You can identify potential trade setups using MACD to find Hooks, Slingshots and Zero-Line Reversals (ZLR). In this lesson, I'm going to continue our examination of MACD, and I've saved the best for last. The No. 1 reason to love technical indicators is that you can use one like MACD to count Elliott waves. Let me count the ways (and the waves):

You Can Count Impulse Waves and Identify Wave 3 Extremes

Often, an extreme reading in MACD will correspond to the extreme of wave three. This correlation appears when MACD tests zero in wave four, prior to the development of wave five. During a typical wave five, the MACD reading will be smaller in magnitude than it was during wave three, creating what is commonly referred to as divergence. An example is illustrated in Figure 15 (Sugar).

In this chart, you can see how the extreme reading in MACD is in line with the top of wave three, which occurred in July. MACD pulled back to zero in wave four before turning up in wave five. And though sugar prices were higher at the end of wave (v) than at the end of wave (iii), MACD readings during wave (v) fell far short of their wave (iii) peak.

So remember that within a five-wave move, there are three MACD signals to look for:

1. Wave three normally corresponds to an extreme reading in MACD.
2. Wave four accompanies a test of zero.
3. Wave five pushes prices to a new extreme while MACD yields a lower reading than what occurred in wave three.

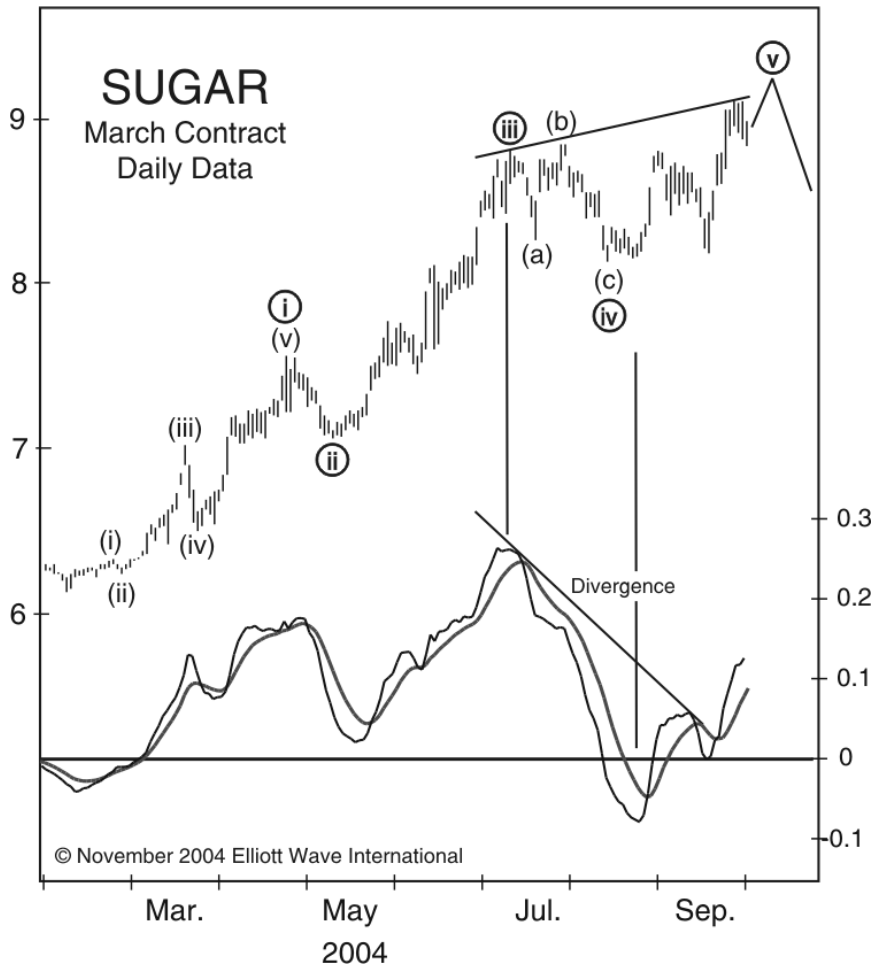

Figure 15

Figures 16 and 17 (Pork Bellies and Soybeans) show important variations on the same theme. Notice how wave four in Pork Bellies coincided with our Zero-Line Reversal, which I discussed in the previous lesson. Figure 17 (Soybeans), shows a five-wave decline that's similar to the five-wave rallies shown in Figures 15 and 16. Together, these charts should give you a good sense of how MACD can help you count Elliott impulse waves on a price chart.

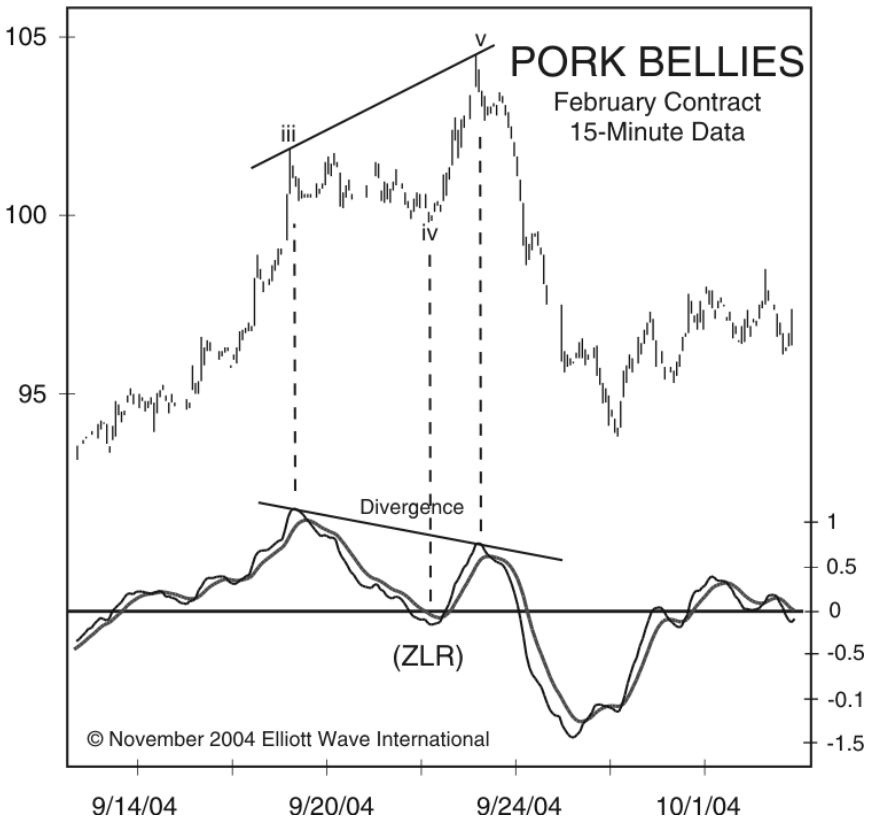

Figure 16

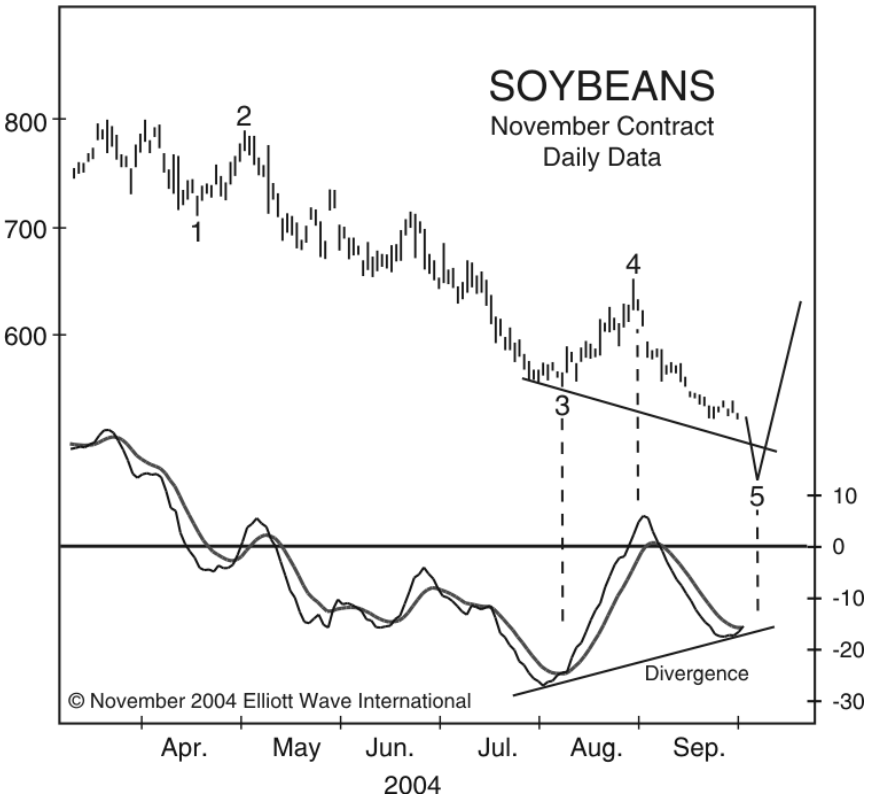

Figure 17

You Can Count Corrective Waves and Time Reversals

MACD also helps to identify the end of corrective waves. In Figure 18 (Live Cattle), you can see a three-wave decline. If you examine MACD, you'll see that although wave C pushed below the extreme of wave A in price, the MACD reading for wave C was above the wave A level.

Figure 19 (Corn) illustrates another example. As you can see, the MACD reading for wave C is below that which occurred in wave A, creating a small but significant divergence. Since it can be difficult to see corrective waves while they're happening, it helps to use MACD as a back up.

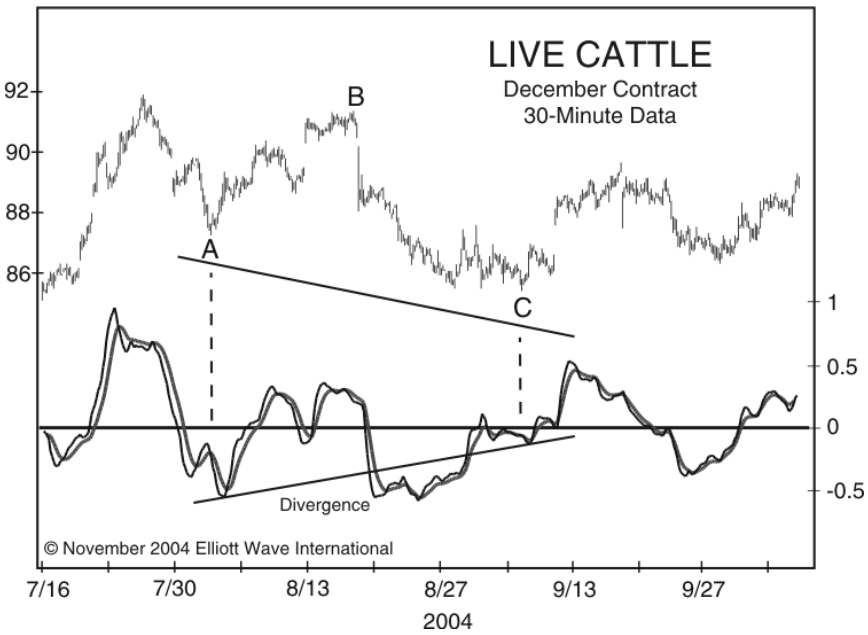

Figure 18

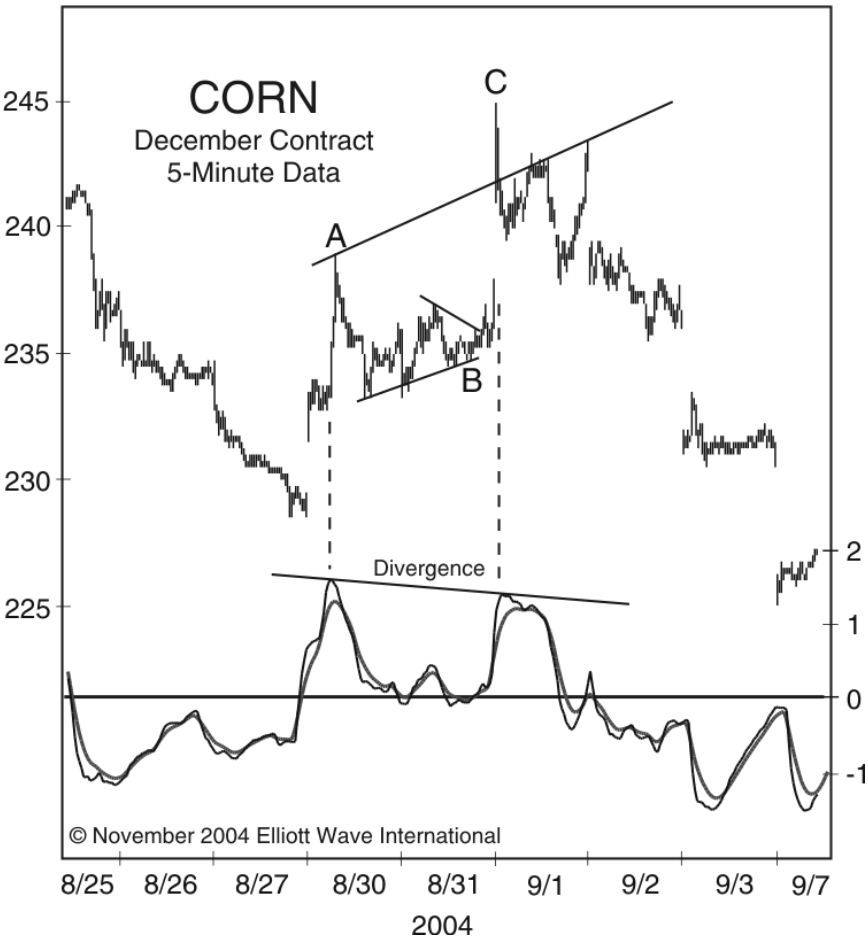

Figure 19

You Can Identify Triangles

MACD can also help you identify triangles. In Figures 20 and 21 (Pork Bellies and Sugar) you'll see contracting triangle wave patterns. MACD traces out similar patterns that are concentrated around the zero-line. In other words, triangles in price often correspond to a flattened MACD near zero.

Overall, my love-hate relationship with technical indicators like MACD has worked out well, so long as I've remembered not to get too caught up in using them. I hope that you will find some of your own reasons to love them, too, but I do want to caution you that you can get burned if you become too enamored with them. Remember, it's price that brought you to this dance, and you should always dance with the one that brung you.

[NOVEMBER 2004]

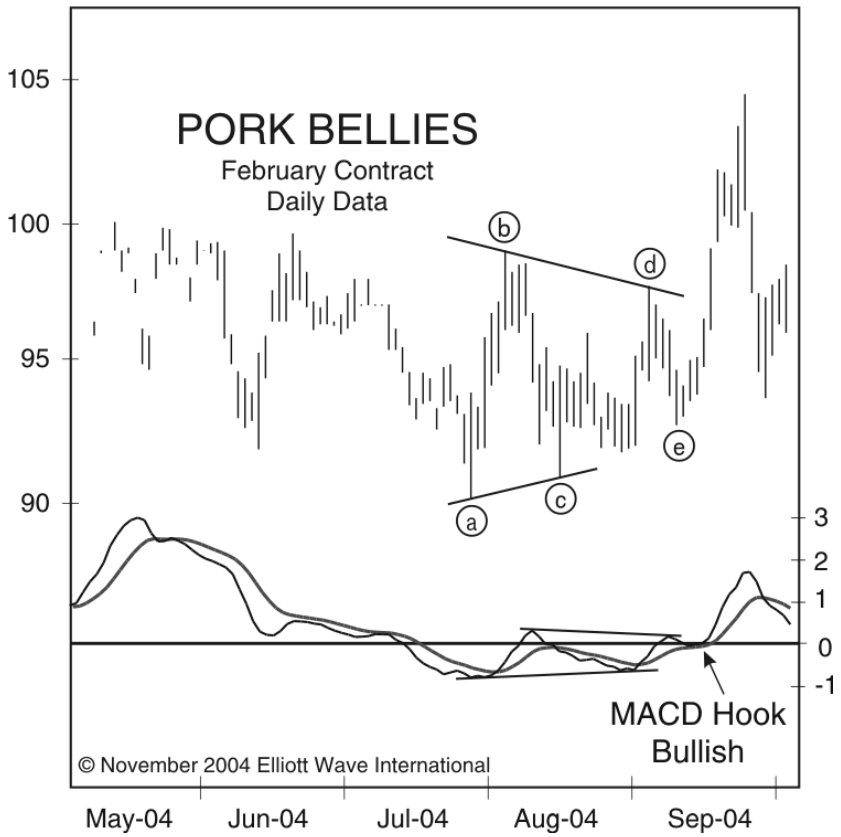

Figure 20

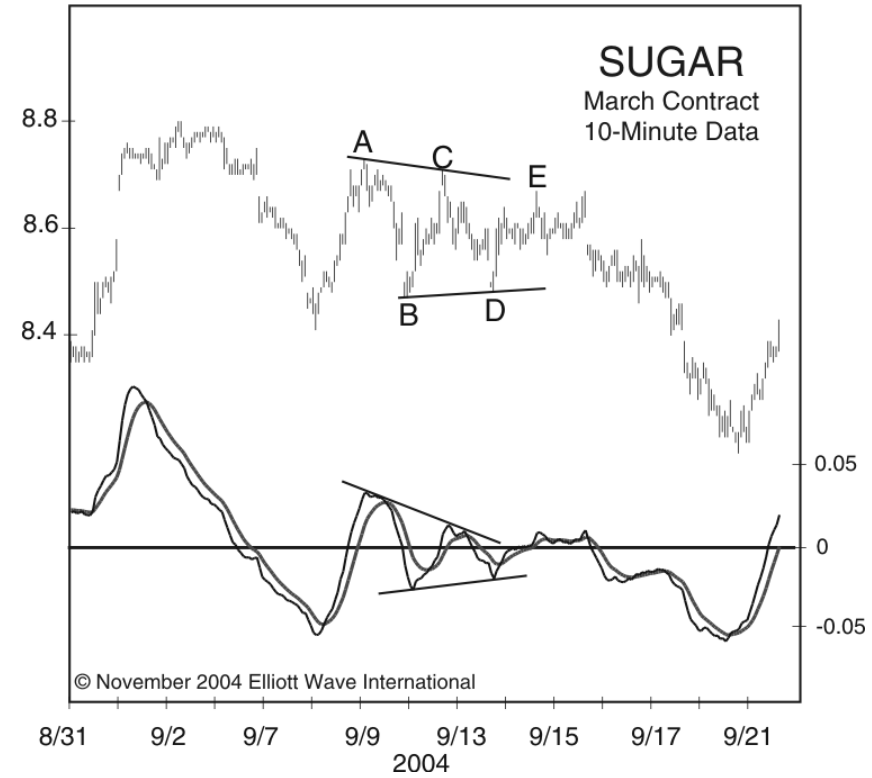

Figure 21

3. How Moving Averages Can Alert You to Future Price Expansion

I want to share with you one of my favorite trade set-ups, called Moving Average Compression (MAC). I like it because it consistently works, and you can customize it to your individual trading style and time frame.

MAC is simply a concentration of moving averages with different parameters, and when it occurs on a price chart, the moving averages appear knotted like tangled strands of Christmas tree lights.

Let's look at Figure 22 (Live Cattle). Here, you can see three different simple moving averages, which are based on Fibonacci numbers (13, 21 and 34). The points where these moving averages come together and seemingly form one line for a period of time is what I refer to as Moving Average Compression.

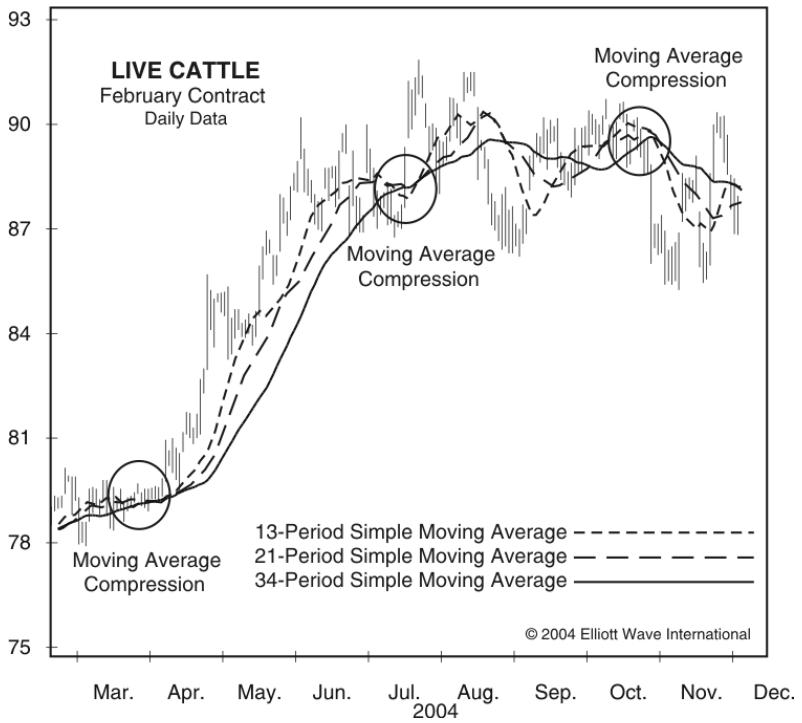

Figure 22

Moving Average Compression works so well in identifying trade set-ups because it represents periods of market *contraction*. As we know, because of the Wave Principle, after markets expand, they contract (when a five-wave move is complete, prices retrace a portion of this move in three waves). MAC alerts you to those periods of price contraction. And since this state of price activity can't be sustained, MAC is also precursor to price *expansion*.

Notice early April in Figure 22 (Live Cattle), when the three simple moving averages I'm using formed what appears to be a single line and did so for a number of trading days. This kind of compression shows us that a market has contracted, and therefore will soon expand — which is exactly what Live Cattle did throughout the months of April and May.

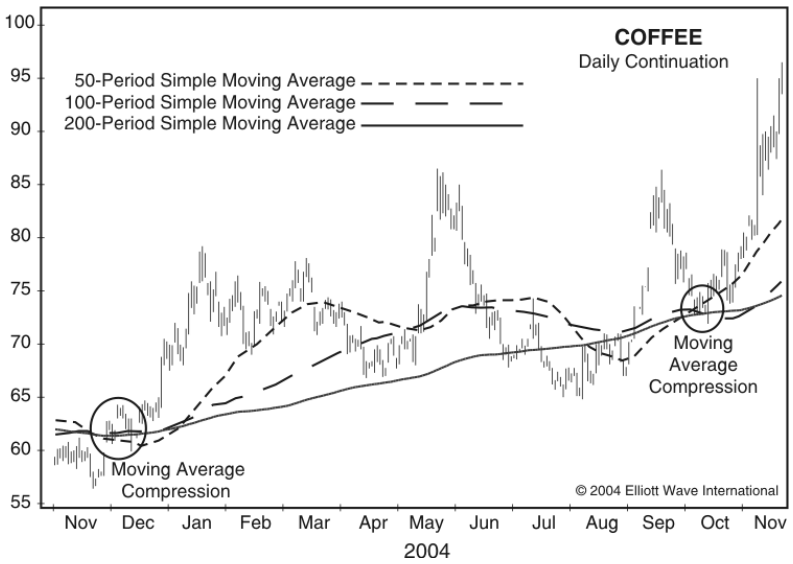

Figure 23

I also like MAC because it is such a flexible tool — it doesn't matter what parameters you use. You can use very long-period moving averages as shown in Figure 23 (Coffee) or multiple moving averages as shown on the next page in Figure 24 (Feeder Cattle), and you will still find MAC signals.

It also doesn't matter whether you use simple, exponential, weighted or smoothed moving averages. The end result is the same: the averages come together during periods of market contraction and move apart when the market expands. As with all my tools, this one works regardless of time frame or market. Figure 25 (Soybeans) is a 15-minute chart, where the moving averages compressed on a number of occasions prior to sizable moves in price.

I would love to say the concept of Moving Average Compression is my original idea, but I can't. It is actually my variation of Daryl Guppy's Multiple Moving Average indicator. His indicator is visually breathtaking, because it uses 12 exponential moving averages of different colors. I first encountered Guppy's work in the February 1998 issue of *Technical Analysis of Stocks and Commodities* magazine. I highly recommend the article.

[DECEMBER 2004]

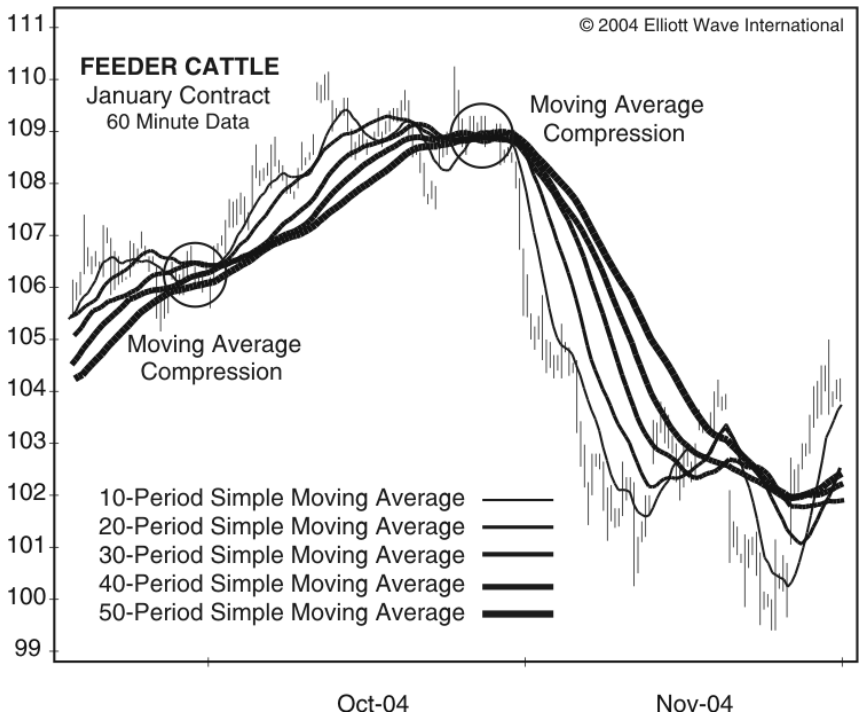

Figure 24

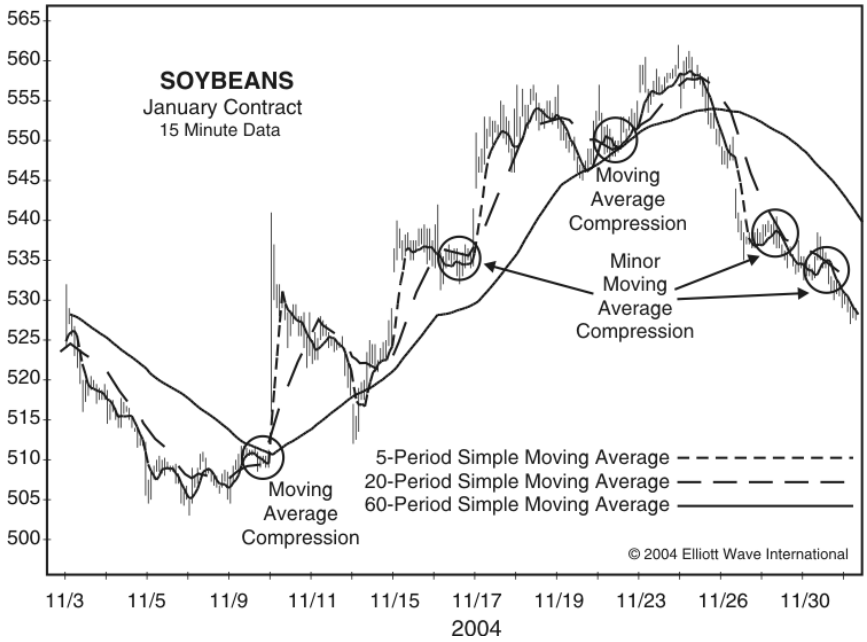

Figure 25

Chapter 4 — Origins and Applications of the Fibonacci Sequence

From Fibonacci to Elliott

You can tell that a trendy word or phrase has reached "buzzword" status when it is more often used to impress than to explain. A few years ago, the buzzword I heard most often was "win-win," a concept popularized by Stephen Covey. Technical analysts, in recent years, have unfortunately elevated "Fibonacci" to the same level. A better understanding of Fibonacci may not save the term from buzzword status, but it will provide some insight to its popularity.

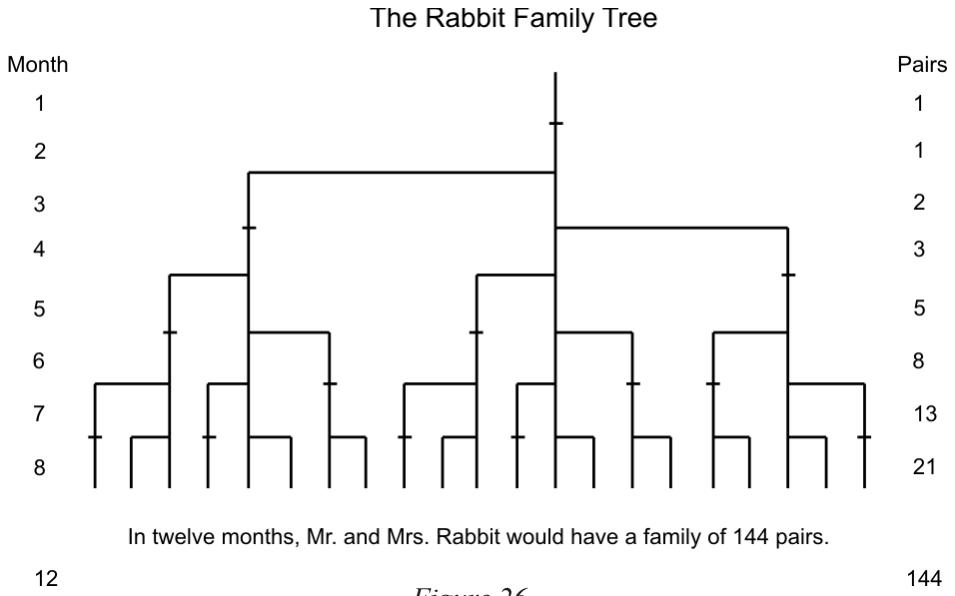

Figure 26

Leonardo Fibonacci da Pisa was a thirteenth-century mathematician who posed a question: How many pairs of rabbits placed in an enclosed area can be produced in a single year from one pair of rabbits, if each gives birth to a new pair each month starting with the second month? The answer: 144.

Fibonacci Ratio Table

DENOMINATOR \ NUMERATOR	1	2	3	5	8	13	21	34	55	89	144
1	1.00	2.00	3.00	5.00	8.00	13.00	21.00	34.00	55.00	89.00	144.00
2	.50	1.00	1.50	2.50	4.00	6.50	10.50	17.00	27.50	44.50	72.00
3	.333	.667	1.00	1.667	2.667	4.33	7.00	11.33	18.33	29.67	48.00
5	.20	.40	.60	1.00	1.60	2.60	4.20	6.80	11.00	17.80	28.80
8	.125	.25	.375	.625	1.00	1.625	2.625	4.25	6.875	11.125	18.00
13	.077	.154	.231	.385	.615	1.00	1.615	2.615	4.23	6.846	11.077
21	.0476	.0952	.1429	.238	.381	.619	1.00	1.619	2.619	4.238	6.857
34	.0294	.0588	0882	.147	.235	.3824	.6176	1.00	1.618	2.618	4.235
55	.01818	.03636	.0545	.0909	.1455	.236	.3818	.618	1.00	1.618	2.618
89	.011236	.02247	.0337	.05618	.08989	.146	.236	.382	.618	1.00	1.618
144	.006944	.013889	.0208	.0347	.05556	.0903	.1458	.236	.382	.618	1.00

Towards perfect ratios

Figure 27

The genius of this simple little question is not found in the answer, but in the pattern of numbers that leads to the answer: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, and 144. This sequence of numbers represents the propagation of rabbits during the 12-month period and is referred to as the Fibonacci sequence.

The ratio between consecutive numbers in this set approaches the popular .618 and 1.618, the Fibonacci ratio and its inverse. (Relating non-consecutive numbers in the set yields other popular ratios - .146, .236, .382, .618, 1.000, 1.618, 2.618, 4.236, 6.854....)

Since Leonardo Fibonacci first contemplated the mating habits of our furry little friends, the relevance of this ratio has been proven time and time again. From the DNA strand to the galaxy we live in, the Fibonacci ratio is present, defining the natural progression of growth and decay. One simple example is the human hand, comprised of five fingers with each finger consisting of three bones.

In addition to recognizing that the stock market undulates in repetitive patterns, R. N. Elliott also realized the importance of the Fibonacci ratio. In Elliott's final book, *Nature's Law*, he specifically referred to the Fibonacci sequence as the mathematical basis for the Wave Principle. Thanks to his discoveries, we use the Fibonacci ratio in calculating wave retracements and projections today.

1. How To Identify Fibonacci Retracements

The primary Fibonacci ratios that I use in identifying wave retracements are .236, .382, .500, .618 and .786. Some of you might say that .500 and .786 are not Fibonacci ratios; well, it's all in the math. If you divide the second month of Leonardo's rabbit example by the third month, the answer is .500, 1 divided by 2; .786 is simply the square root of .618.

There are many different Fibonacci ratios used to determine retracement levels. The most common are .382 and .618. However, .472, .764 and .707 are also popular choices. The decision to use a certain level is a personal choice. What you continue to use will be determined by the markets.

The accompanying charts demonstrate the relevance of .236, .382, .500 .618 and .786. It's worth noting that Fibonacci retracements can be used on any time frame to identify potential reversal points. An important aspect to remember is that a Fibonacci retracement of a previous wave on a weekly chart is more significant than what you would find on a 60-minute chart.

With five chances, there are not many things I couldn't accomplish. Likewise, with five retracement levels, there won't be many pullbacks that I'll miss. So how do you use Fibonacci retracements in the real world, when you're trading? Do you buy or sell a .382 retracement or wait for a test of the .618 level, only to realize that prices reversed at the .500 level?

The Elliott Wave Principle provides us with a framework that allows us to focus on certain levels at certain times. For example, the most common retracements for waves two, B and X are .500 or .618 of the previous wave. Wave four typically ends at or near a .382 retracement of the prior third wave that it is correcting.

In addition to the above guidelines, I have come up with a few of my own over the past 10 years. The first is that the best third waves originate from deep second waves. In the wave two position, I like to see a test of the .618 retracement of wave one or even .786. Chances are that a shallower wave two is actually a B or an X wave. In the fourth-wave position, I find the most common Fibonacci retracements to be .382 or .500. On occasion, you will see wave four retrace .618 of wave three. However, when this occurs, it is often sharp and quickly reversed. My rule of thumb for fourth waves is that whatever is done in price, won't be done in time. What I mean by this is that if wave four is time-consuming, the

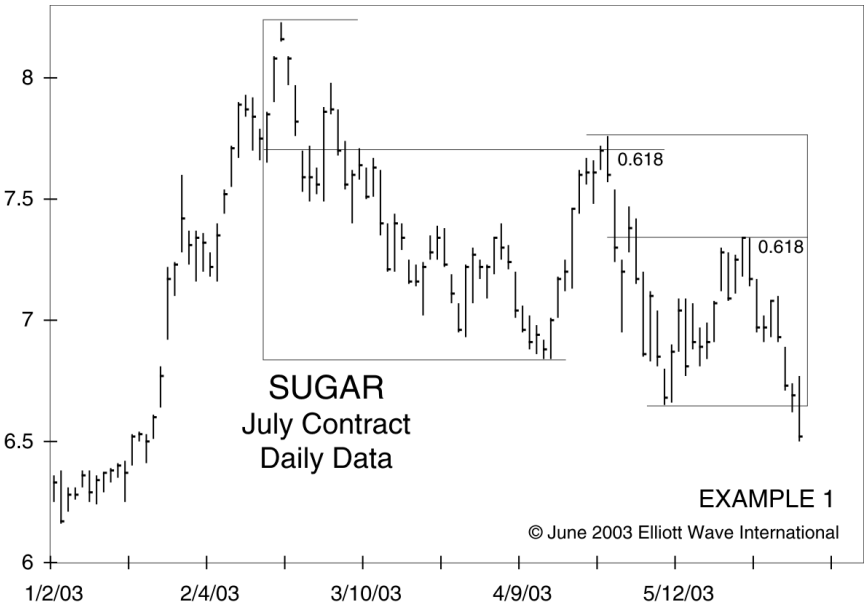

Figure 28

relevant Fibonacci retracement is usually shallow, .236 or .382. For example, in a contracting triangle where prices seem to chop around forever, wave e of the pattern will end at or near a .236 or .382 retracement of wave three. When wave four is proportional in time to the first three waves, I find the .500 retracement significant. A fourth wave that consumes less time than wave two will often test the .618 retracement of wave three and suggests that more players are entering the market, as evidenced by the price volatility. And finally, in a fast market, like a "third of a third wave," you'll find that retracements are shallow, .236 or .382.

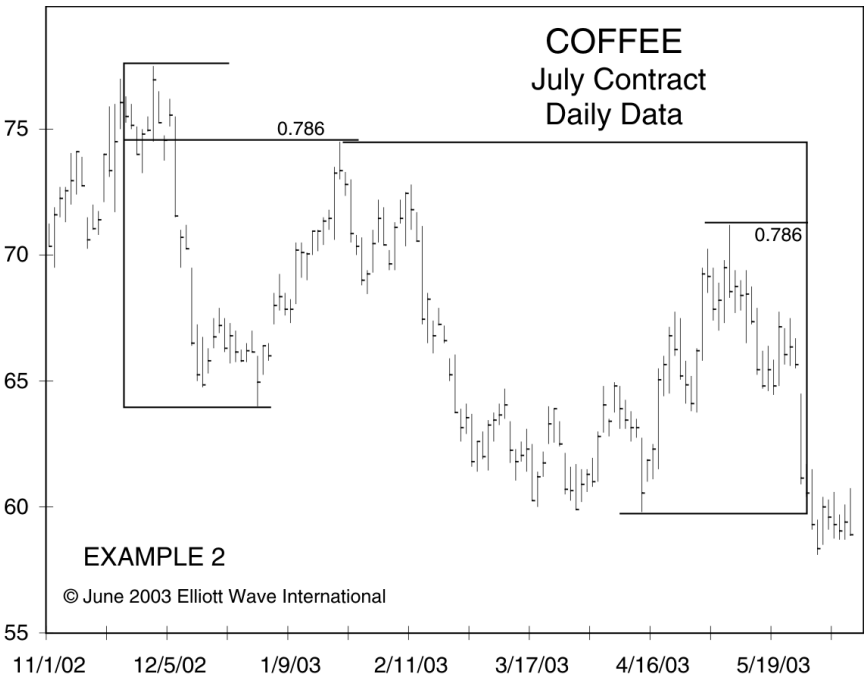

Figure 29

In closing, there are two things I would like to mention. First, in each of the accompanying examples, you'll notice that retracement levels repeat. Within the decline from the February high in July Sugar (Figure 28), each counter-trend move was a .618 retracement of the previous wave. Figure 29 demonstrates the same tendency with the .786 retracement. This event is common and is caused by the fractal nature of the markets.

Second, Fibonacci retracements identify high probability targets for the termination of a wave; they do not represent an absolute must-hold level. So when using Fibonacci retracements, don't be surprised to see prices reverse a few ticks above or below a Fibonacci target. This occurs because other traders are viewing the same levels and trade accordingly. Fibonacci retracements help to focus your attention on a specific price level at a specific time; how prices react at that point determines the significance of the level.

[July 2003]

2. How To Calculate Fibonacci Projections

The Fibonacci ratio isn't just helpful for labeling retracements that have already occurred, it's equally helpful when projecting future market moves.

Impulse Waves

Beginning with impulse waves three and five, the primary Fibonacci ratios are 1.000, 1.618, 2.618 and 4.236. The most common Fibonacci multiples for third waves are 1.618, 2.618 and least often, 4.236. To calculate a wave-three projection, you take the distance traveled in wave one, multiply it by 1.618, and extend that sum from the extreme of wave two. The result is a high probability target for wave three.

In Figure 30, a 1.618 multiple of wave 1 identifies 643 as an ideal objective for wave 3 up from the August low. The wave 3 high came in at 635, moderately below our objective. Sometimes prices will fall short of an objective, while exceeding it at other times. Fibonacci projections and retracements identify highly probable areas or regions of termination, not absolute objectives. Figure 31 illustrates a third wave rally that attained a 2.618 multiple of wave 1.

There is little difference between calculating fifth waves and third waves, except that with fifth waves we have more "history," namely in waves one and three. Within a five-wave move, wave three will typically be the "extended" wave, while waves one and five will tend toward equality (see Figure 32). So our first Fibonacci ratio is equality (1.000) between waves one and five. When wave five is the extended wave (as is often the case in commodities), wave five will equal a Fibonacci multiple of waves one through three.

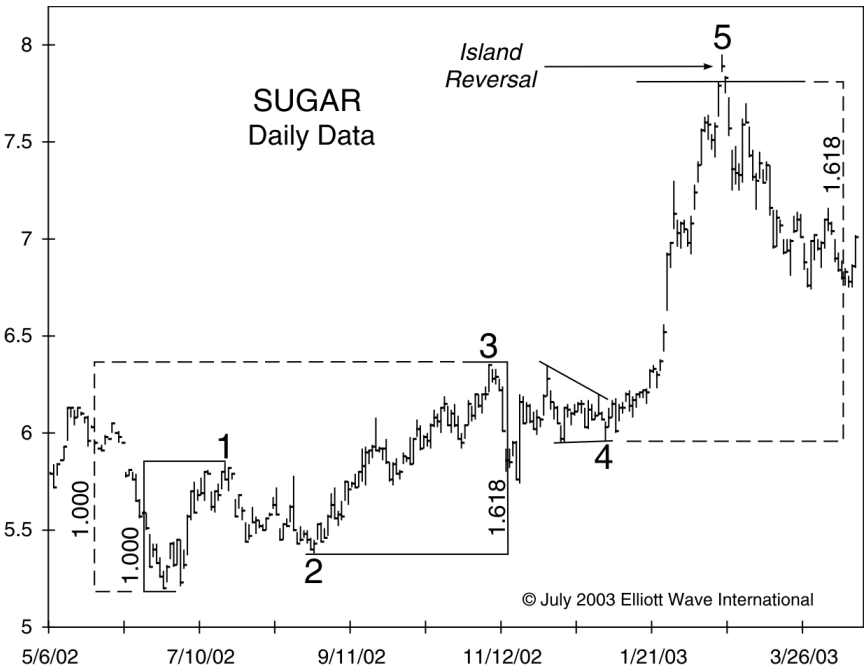

Figure 30

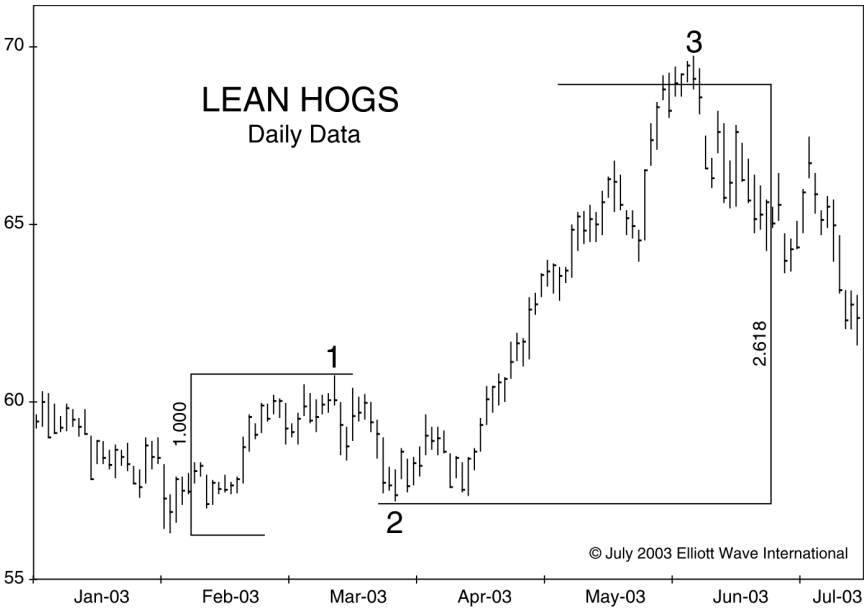

Figure 31

In Figure 32, we see that wave 5 was the extended wave within this impulsive sequence and that it pushed moderately above the 1.618 multiple of waves 1 through 3 at 782 before reversing dramatically.

For you die-hard technicians, that lonely little bar at the top of the chart just above 782 (February 20th) is an "island reversal." (see Figure 30). This pattern occurs when the low on a bar is above the previous day's high, and the high on the following day is below the preceding low. At highs, this chart pattern has a bearish implication, and vice versa at lows. Seeing this traditionally bearish chart pattern — especially when Elliott wave analysis identified a highly probable termination point for wave 5 — was a red flag for the ensuing decline.

When wave one is the extended wave, waves three through five will tend toward a .618 relationship of the distance traveled in wave one.

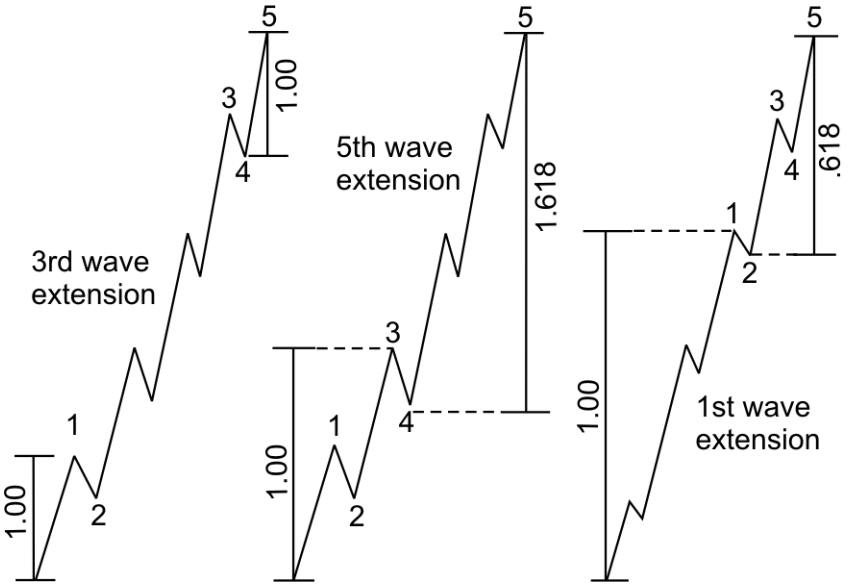

Figure 32

Corrective Waves

Corrective patterns fall into three categories: Zigzags, Flats and Triangles. You can project the probable path of Zigzags and Flats using the same method we use for impulsive moves as long as you observe that corrective patterns commonly involve different Fibonacci ratios.

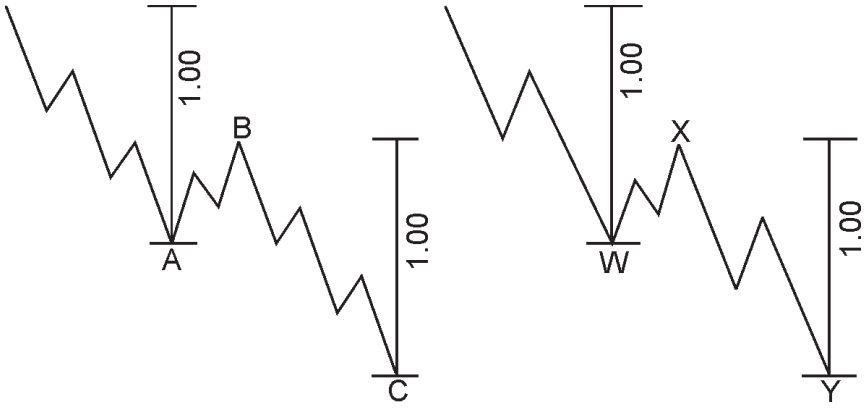

Figure 33

A Zigzag subdivides as 5-3-5. Five waves within wave A, three waves within wave B and five waves within wave C. Normally, waves C and A will tend toward equality, much like waves five and one when wave three is extended (see Figure 33). Sometimes you will see wave C equal a 1.382 multiple of wave A or even a 1.618 multiple of wave A. When wave C equals a 1.618 multiple of wave A, and it is indeed a true corrective pattern, it can reflect increased volatility or imply that certain market participants are trying to stop out as many traders as they can before the correction is fully retraced.

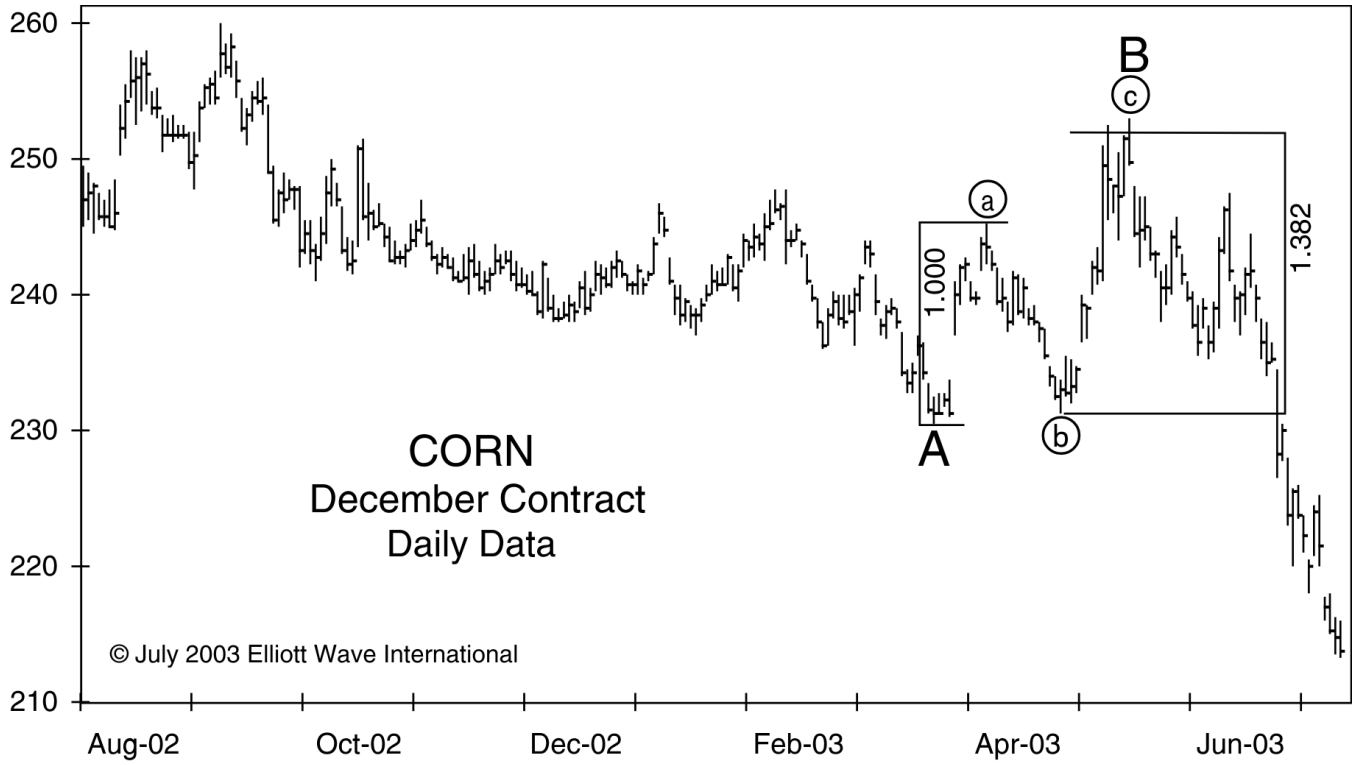

Figure 34

Flat corrections subdivide as 3-3-5; waves A and B consist of three waves, and wave C, as always, is made up of five. Within a normal flat correction, each wave tends toward equality. Wave B will end at or near the origin of wave A, and wave C will finish just below the extreme of wave A. In addition to waves A and C tending toward equality, I often find that wave C will equal a 1.382 multiple of wave A (Figure 34). An expanded flat correction subdivides just like a normal or regular flat, except that wave B exceeds the origin of wave A. In this case, wave C will equal either a 1.618 multiple of wave A or a .618 multiple of wave A extended from the extreme of wave A (see Figure 35).

Because of the unique way that triangles unfold, you should use Fibonacci retracements, rather than projections, to evaluate price targets for triangle corrections. Typically, alternating waves within a triangle will adhere to a .618 or .786 relationship. For example, waves E, D and C will equal approximately a .618 relationship of waves C, B and A, respectively.

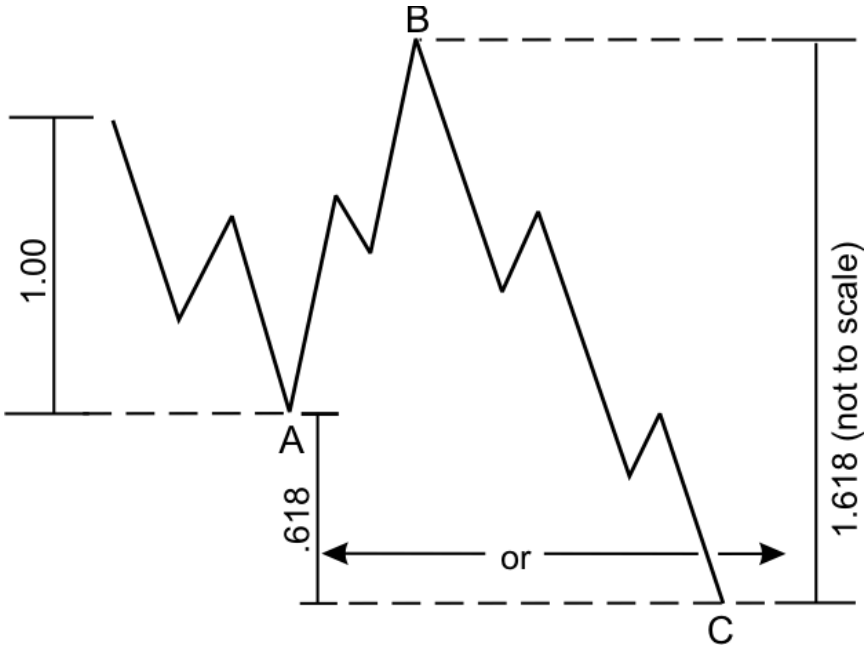

Figure 35

Non-traditional Application

So far we have covered the traditional application of Fibonacci ratios to various Elliott wave patterns. A non-traditional approach that uses the previous wave to project the current wave. For example, wave four would be used to calculate wave five or wave B to project wave C. The most significant Fibonacci ratios I have found using this technique are 1.382 and 2.000. To apply this reverse Fibonacci technique, multiply the previous wave by 1.382 or 2.000 and add the sum to the origin of the developing wave. For example, in Figure 36, the distance between point A and point B is multiplied by 2.000 and projected upward from point B. The objective for this advance was 7950 while the actual high came in at 8050. As you work your way from left to right, you can see that each significant decline in Coffee since the October 2002 high adhered to a 1.382 multiple of the previous wave.

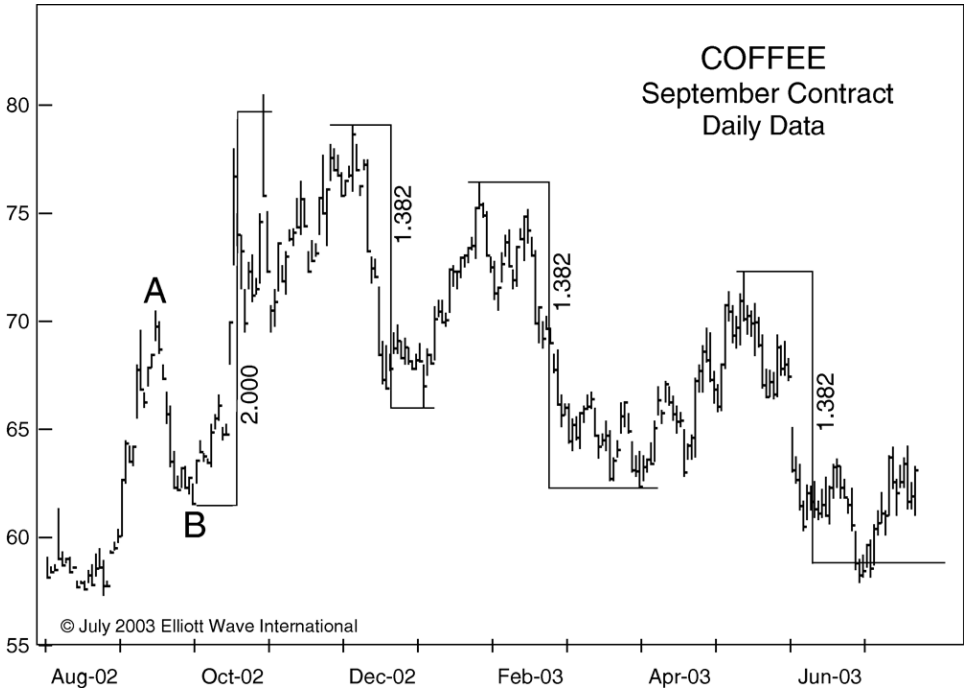

Figure 36

As Figure 36 illustrates, this technique has merit. However, it is presented to illustrate the versatility of Fibonacci and the inherent mathematical nature of markets, and is not a substitute for the traditional method of calculating wave retracements and projections. I use both applications in order to identify concentrations of Fibonacci objectives. As I often mention, the more numerous the Fibonacci relationships, the more significant the identified region or Fibonacci cluster. By combining Fibonacci retracements and Fibonacci projections together, you can truly begin to identify the most highly probable area that prices will react to or strive to attain.

More Information

Additional information on the application of Fibonacci ratios and Elliott wave theory can be found in Elliott Wave Principle: Key to Market Behavior, by A.J. Frost and Robert Prechter. Even after 10 years of wave counting, I continue to view this book as the definitive work on the subject and reference it often. To learn more about the history of Fibonacci, see Leonard of Pisa by Joseph and Frances Gies. Both books are available in the Elliottwave.com bookstore.

[July 2003]

Chapter 5 — How To Apply Fibonacci Math to Real-World Trading

Have you ever given an expensive toy to a small child and watched while the child had less fun playing with the toy than with the box that it came in? In fact, I can remember some of the boxes I played with as a child that became spaceships, time machines or vehicles to use on dinosaur safaris.

In many ways, Fibonacci math is just like the box that kids enjoy playing with imaginatively for hours on end. It's hard to imagine a wrong way to apply Fibonacci ratios or multiples to financial markets, and new ways are being tested every day. Let's look at just some of the ways that I apply Fibonacci math in my own analysis.

Figure 37

Fibonacci Retracements

Financial markets demonstrate an uncanny propensity to reverse at certain Fibonacci levels. The most common Fibonacci ratios I use to forecast retracements are .382, .500 and .618. On occasion, I find .236 and .786 useful, but I prefer to stick with the big three. You can imagine how helpful these can be: Knowing where a corrective move is likely to end often identifies high probability trade setups (Figures 37 and 38).

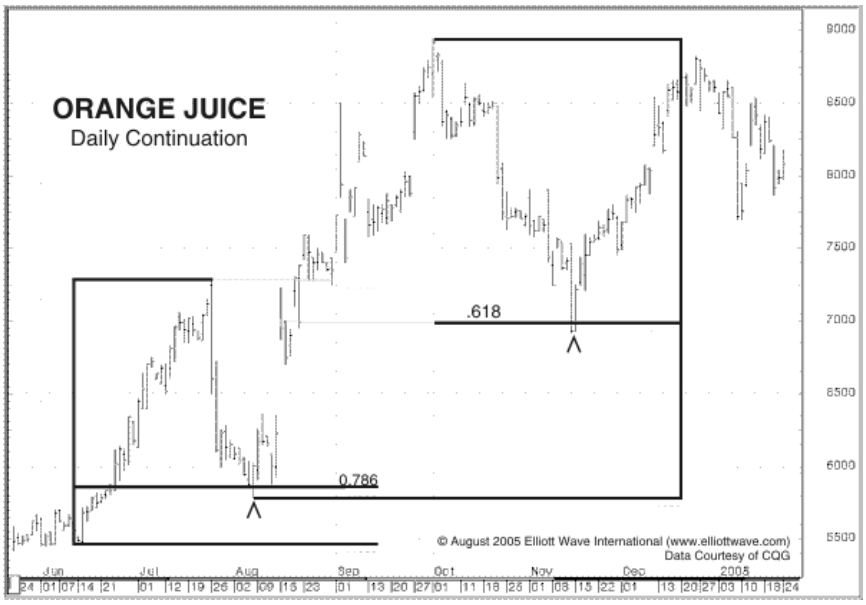

Figure 38

Fibonacci Extensions

Elliotticians often calculate Fibonacci extensions to project the length of Elliott waves. For example, third waves are most commonly a 1.618 Fibonacci multiple of wave one, and waves C and A of corrective wave patterns often reach equality (Figures 39 and 40).

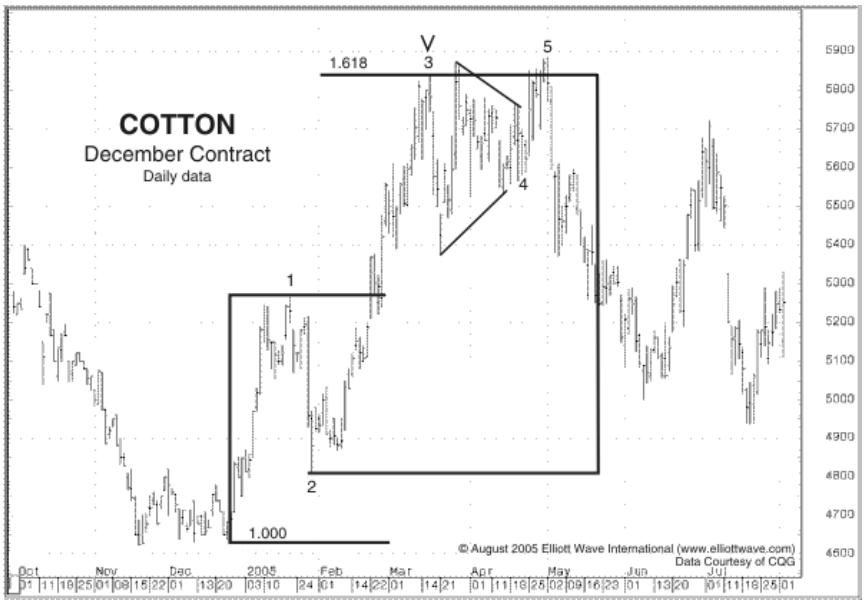

Figure 39

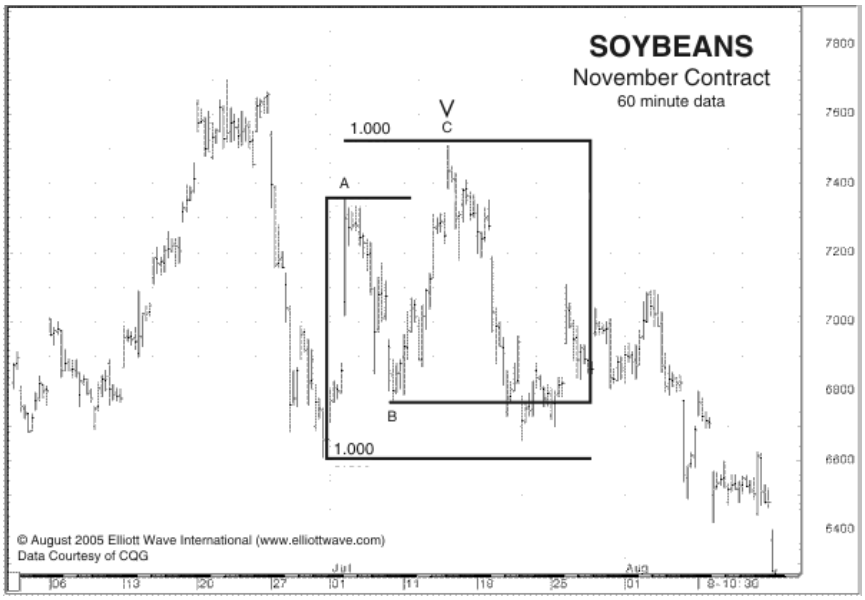

Figure 40

One approach I like and have used for a number of years is a "reverse Fibonacci" application, which uses primarily 1.382 and 2.000 multiples of previous swings to project a price target for the current wave (see Figure 41). I have found that this method has a lot of value, especially when it comes to identifying trade objectives.

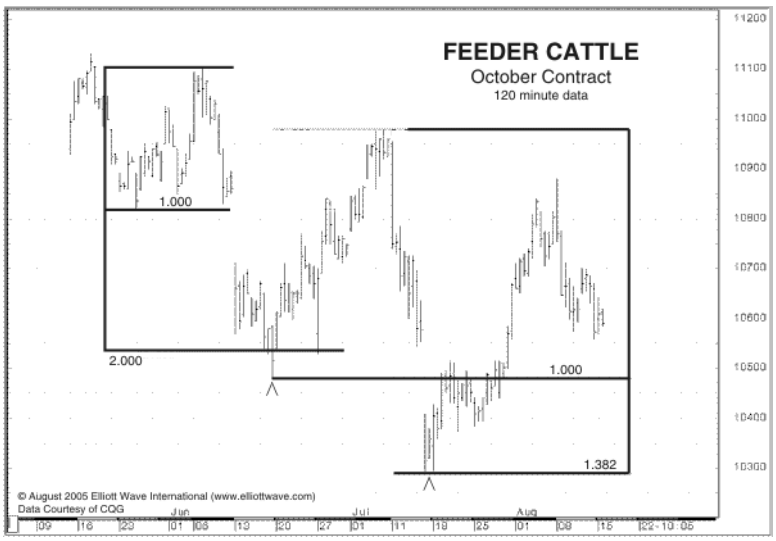

Figure 41

Fibonacci Circles

Fibonacci circles are an exciting way to use Fibonacci ratios, because they take into account both linear price measurements and time. Notice in Figure 42 how the January 2005 advance in Cotton ended right at the 2.618 Fibonacci circle or multiple of the previous swing. Again in Figure 43, we see how resistance created by the 2.618 multiple of a previous swing provided excellent resistance for the February rally in Wheat. Moreover, the arc created by this Fibonacci circle provided solid resistance for price action during July and August of that year as well.

Fibonacci circles are an exciting way to use Fibonacci ratios, but they come with a word of warning: because this technique introduces time into the equation, it is scale-sensitive, meaning that compression data will sometimes distort the outcome.

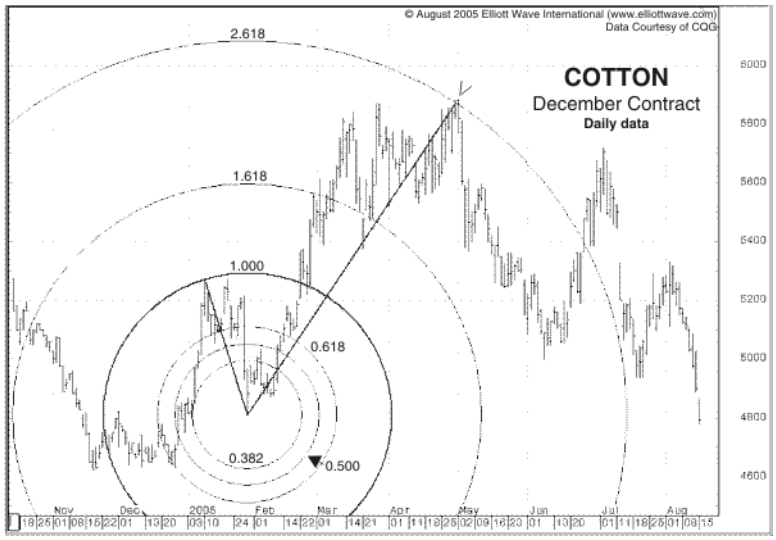

Figure 42

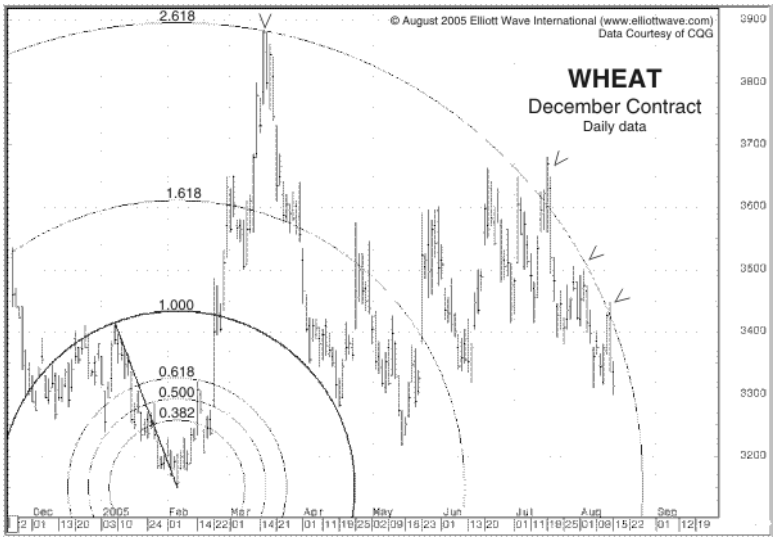

Figure 42

Fibonacci Fan

The Fibonacci fan is another exciting approach using Fibonacci retracements and multiples that involve time. Notice how the .500 Fibonacci fan line in Figure 44 identified formidable resistance for Cocoa in June 2005. A Fibonacci fan line drawn from the March and June peaks came into play in July and again in August by identifying support and resistance (i.e., 1.618 and 1.000) (Figure 45).

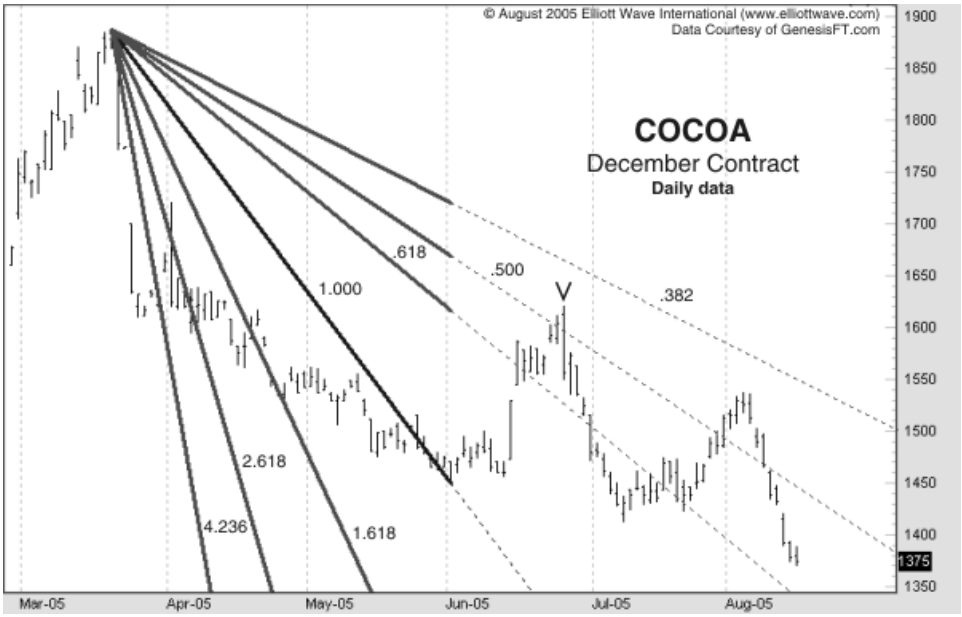

Figure 44

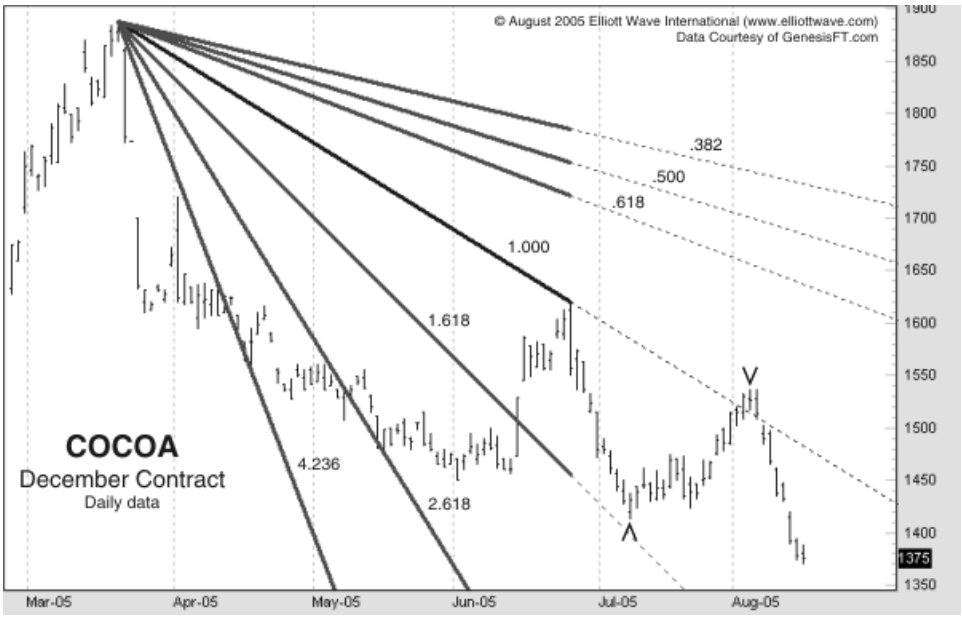

Figure 45

Fibonacci Time

And, finally, there is Fibonacci time. Figure 46 illustrates probably the most common approach to using Fibonacci ratios to identify turning points in financial markets. As you can see, it simply requires multiplying the distance in time between two important extremes by Fibonacci ratios and projecting the results forward in time. This timing approach identified two excellent selling points in Pork Bellies, one of which was the market's all-time high, which occurred at 126.00 in May of 2004.

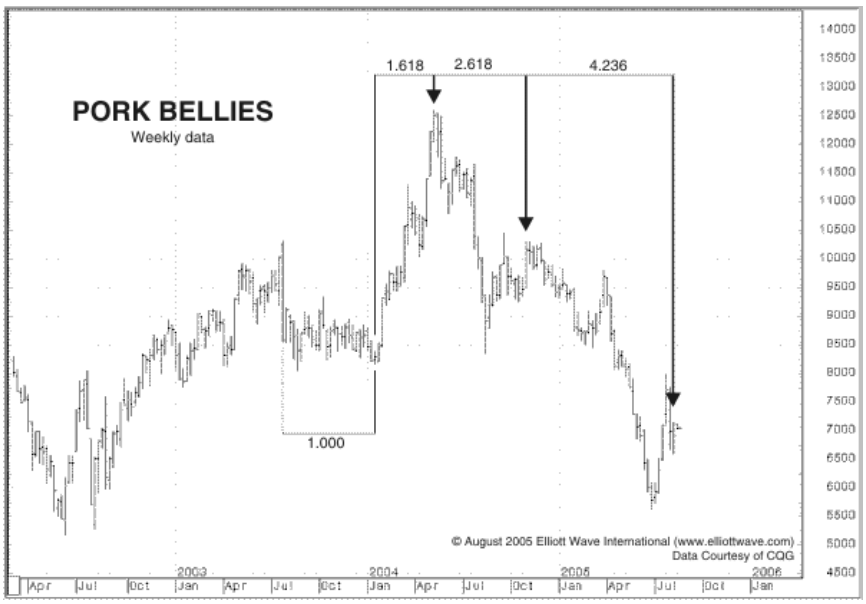

Figure 46

Another way to time potential turns in financial markets is to use the Fibonacci sequence itself (i.e., 1, 1, 2, 3, 5, 8, 13, 21, etc.). In Wheat, beginning on March 15, 2005 it is easy to see how this approach successfully identified several significant turns in price (Figure 47). Also notice how this methodology points to early October as potentially important. [Editor's note: Wheat prices made two-month highs with a double top on September 30 and October 12, then fell 14% into late November.]

A pioneer in the research of Fibonacci relationships in time is Christopher Carolan of Calendar Research. To acquaint yourself with his ground-breaking research into this field, check out his website, www.calendarresearch.com.

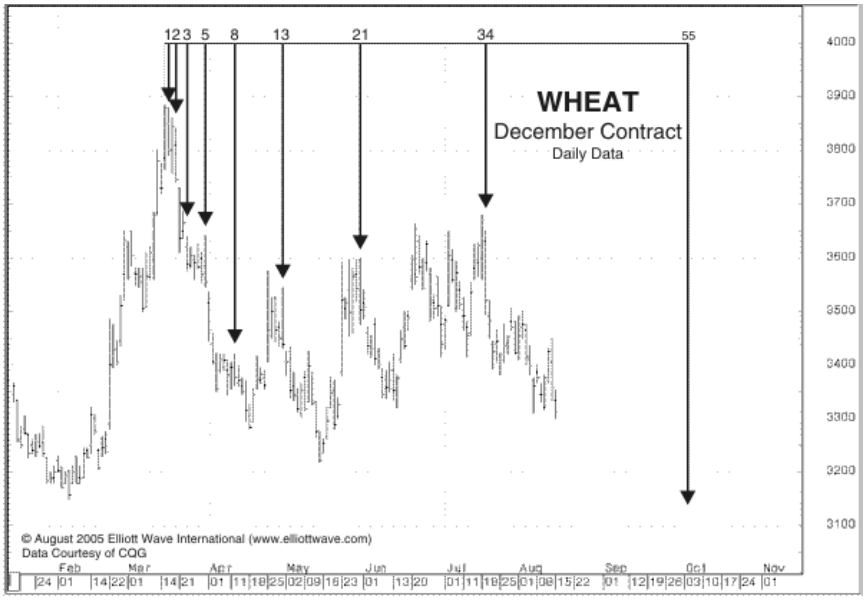

Figure 47

Conclusion

In the end, just as there is no wrong way to play with a box, there is no wrong way to apply Fibonacci analysis to financial markets. What is even more exciting, there are ways of applying Fibonacci to market analysis that haven't been revealed or discovered yet. So take your Fibonacci box and have fun, and, remember, you are limited only by your imagination. If you find something new, let me know.

[AUGUST 2005]

Who Was Fibonacci and Why Is He Famous?

For a brief history on the Fibonacci sequence, here's an excerpt from Section V of *Trader's Classroom Collection: Volume 1* (pp. 20-21):

> "Leonardo Fibonacci da Pisa was a thirteenth-century mathematician who posed a question: How many pairs of rabbits placed in an enclosed area can be produced in a single year from one pair of rabbits, if each gives birth to a new pair each month, starting with the second month? The answer: 144.
>
> "The genius of this simple little question is not found in the answer but in the pattern of numbers that leads to the answer: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, and 144. This sequence of numbers represents the propagation of rabbits during the 12-month period and is referred to as the Fibonacci sequence.
>
> "The ratio between consecutive numbers in this set approaches the popular .618 and 1.618, the Fibonacci ratio and its inverse. (Other ratios that can be derived from non-consecutive numbers in the sequence are: .146, .236, .382, 1.000, 2.618, 4.236, 6.854…)
>
> "Since Leonardo Fibonacci first contemplated the mating habits of our furry little friends, the relevance of this ratio has been proved time and time again. From the DNA strand to the galaxy we live in, the Fibonacci ratio is present, defining the natural progression of growth and decay. One simple example is the human hand, comprising five fingers with each finger consisting of three bones. [Editor's note: In fact, the August 2005 issue of Science magazine discusses Fibonacci realtionships on the micro- and nano- level.]
>
> "In addition to recognizing that the stock market undulates in repetitive patterns, R.N. Elliott also realized the importance of the Fibonacci ratio. In Elliott's final book, Nature's Law, he specifically referred to the Fibonacci sequence as the mathematical basis for the Wave Principle. Thanks to his discoveries, we use the Fibonacci ratio in calculating wave retracements and projections today."

Note:

Find the rest of this lesson in Volume 1 of *Trader's Classroom Collection*: www.elliottwave.com/subscribers/traders_classroom/

Chapter 6 — How To Draw and Use Trendlines

1. The Basics: "How a Kid with a Ruler Can Make a Million"

When I began my career as an analyst, I was lucky enough to spend some time with a few old pros. I will always remember one in particular, who told me that a kid with a ruler could make a million dollars in the markets. He was talking about trendlines. And I was sold.

I spent nearly three years drawing trendlines and all sorts of geometric shapes on price charts. And you know, that grizzled old trader was only half right. Trendlines are one of the simplest and most dynamic tools an analyst can employ... but I have yet to make my million dollars, so he was either wrong or at least premature on that point.

Despite being extremely useful, trendlines are often overlooked. I guess it's just human nature to discard the simple in favor of the complicated. (Heaven knows, if we don't understand it, it must work, right?)

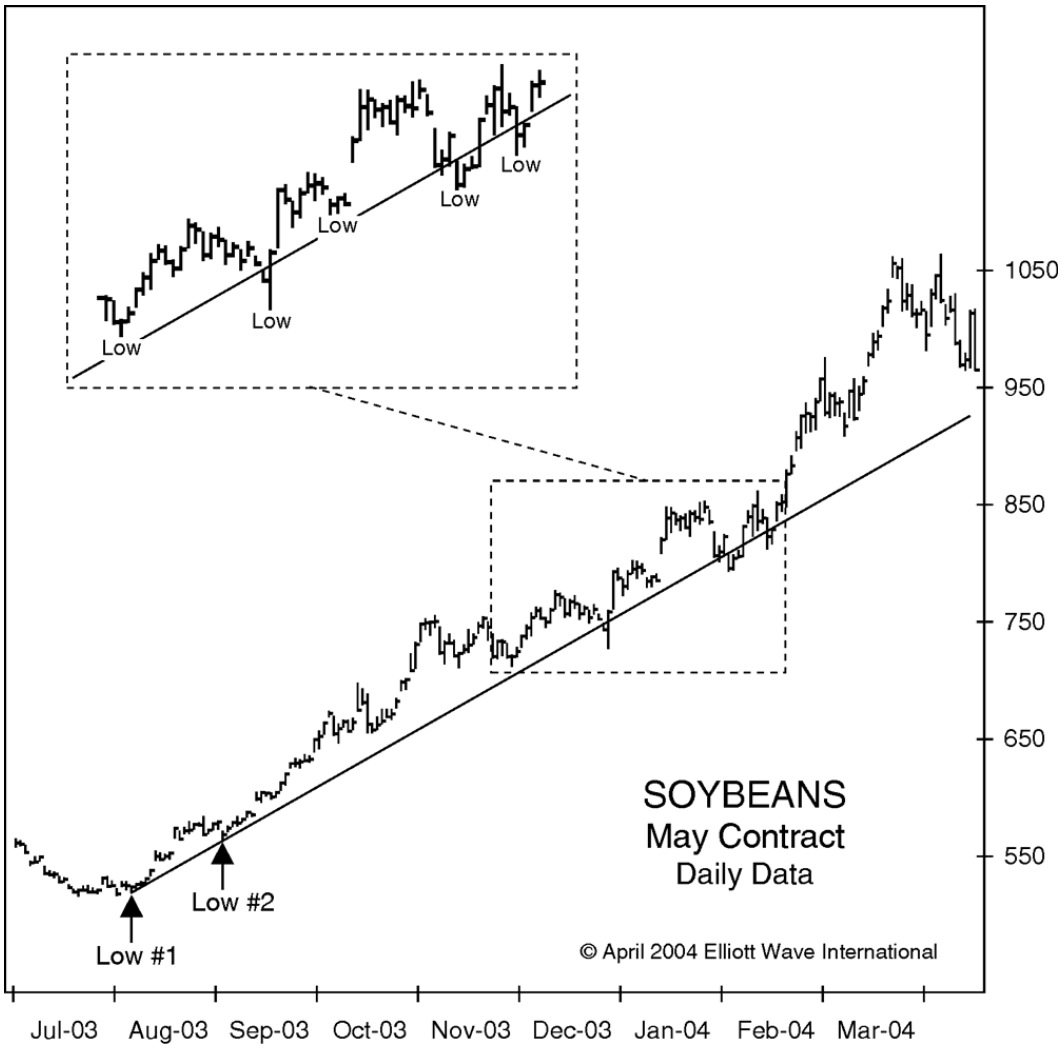

Figure 48

In Figure 48, I have drawn a trendline using two lows that occurred in early August and September 2003. As you can see, each time prices approached this line, they reversed course and advanced. Sometimes, Soybeans only fell to near this line before turning up. And other times, prices broke through momentarily before resuming the larger uptrend. But what still amazes me is that two seemingly insignificant lows last year pointed out the direction of Soybeans – and identified several potential buying opportunities – for the next six months!

Primary Angle

Besides simply connecting highs and lows, you can draw trendlines in many other ways that are just as exciting and informative. Figure 49 shows a technique I call Primary Angle. Notice the upward trendline drawn in Sugar in late 1999 (A1). Now look at the trendline up from the 2002 low (A2). See anything interesting? These two trendlines are parallel! The slope of the late 1999 rally is the same for the 2002 advance. In fact, the range of the weekly high for the 2002 advance encompasses this line. The same is true for the two downward sloping trendlines drawn off the 2000 and 2003 highs (B1 & B2); the angle of the decline is the same.

Another way to use Primary Angle besides identifying possible trend changes is clear in Figure 50. The trendline up from the March low is a parallel of the late February advance. As you can see, prices were falling off of this trendline by the March high. I interpret this move as weak price action with waning momentum. And resulting price action supports this conclusion. In Figure 51, notice how prices are to the right of the downward trendline from the March high. Again, this selloff lacks the intensity of its predecessor. You can see in Figure 52 why this makes sense from an Elliott perspective. The wave pattern from the late February 35.05 peak is an expanded flat correction (3-3-5). Wave (a) bottomed at 31.75 (basis May), and wave (b) topped at 35.18 [after making a moderate new high beyond the extreme of wave (a)]. Wave (c) of 9 is under way, targeting Fibonacci support at 30.44-29.63. It's not surprising to see prices behave like this near the end of a wave pattern.

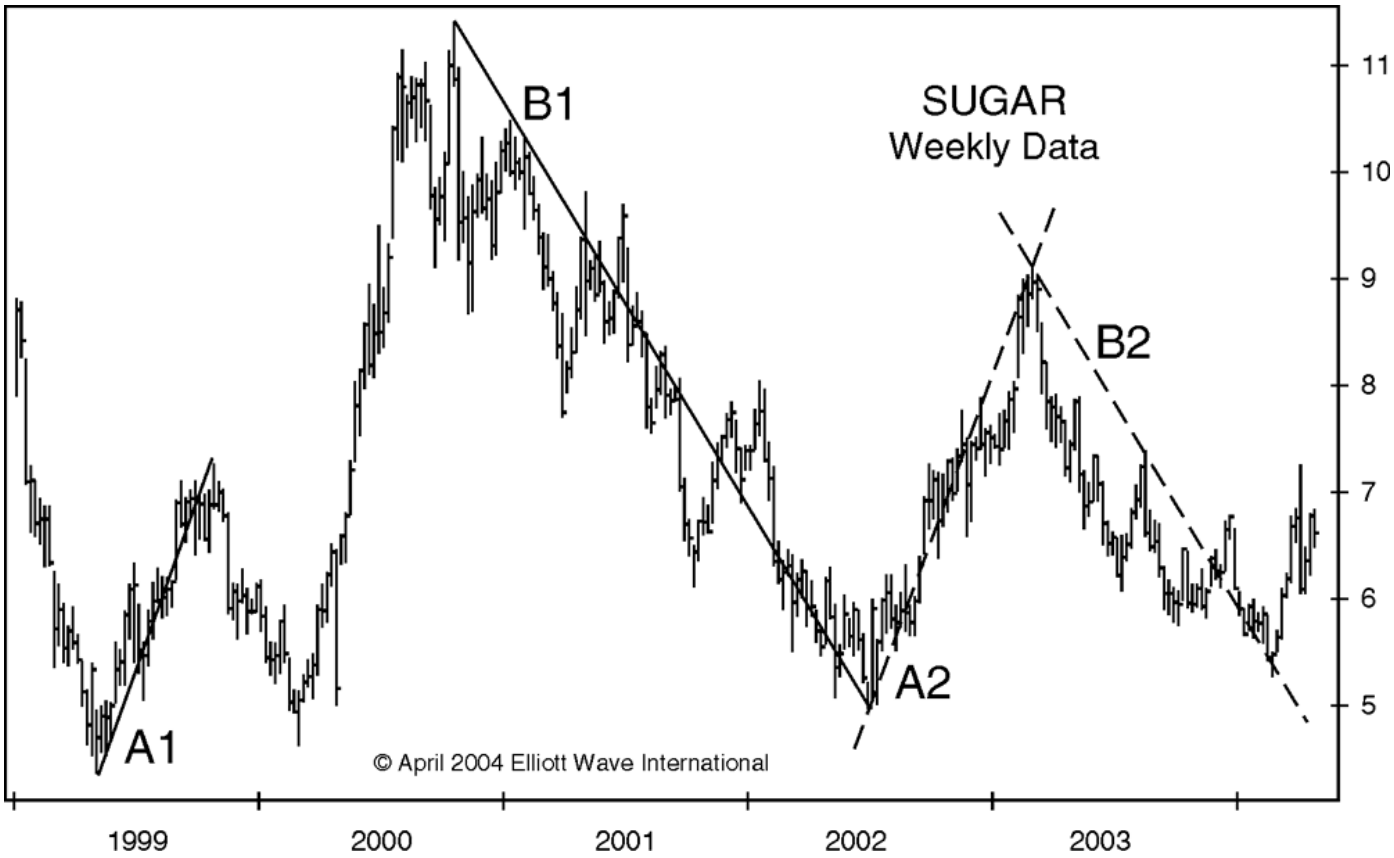

Figure 49

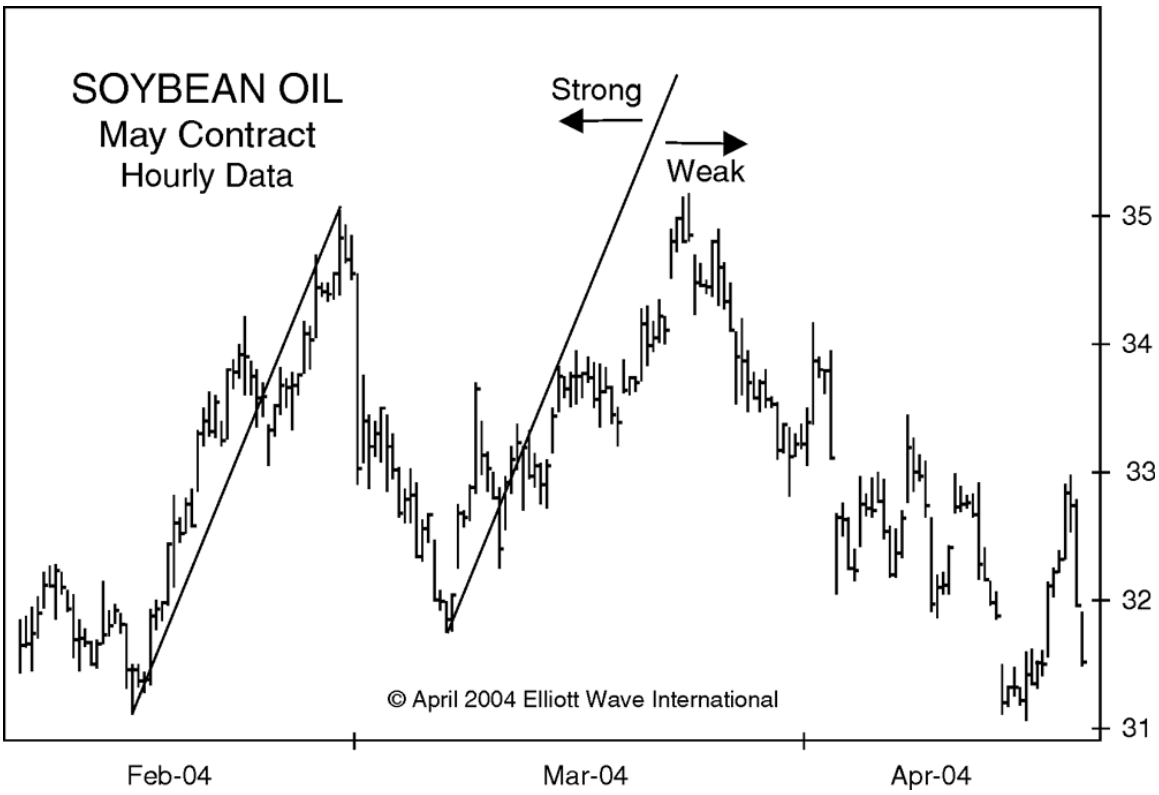

Figure 50

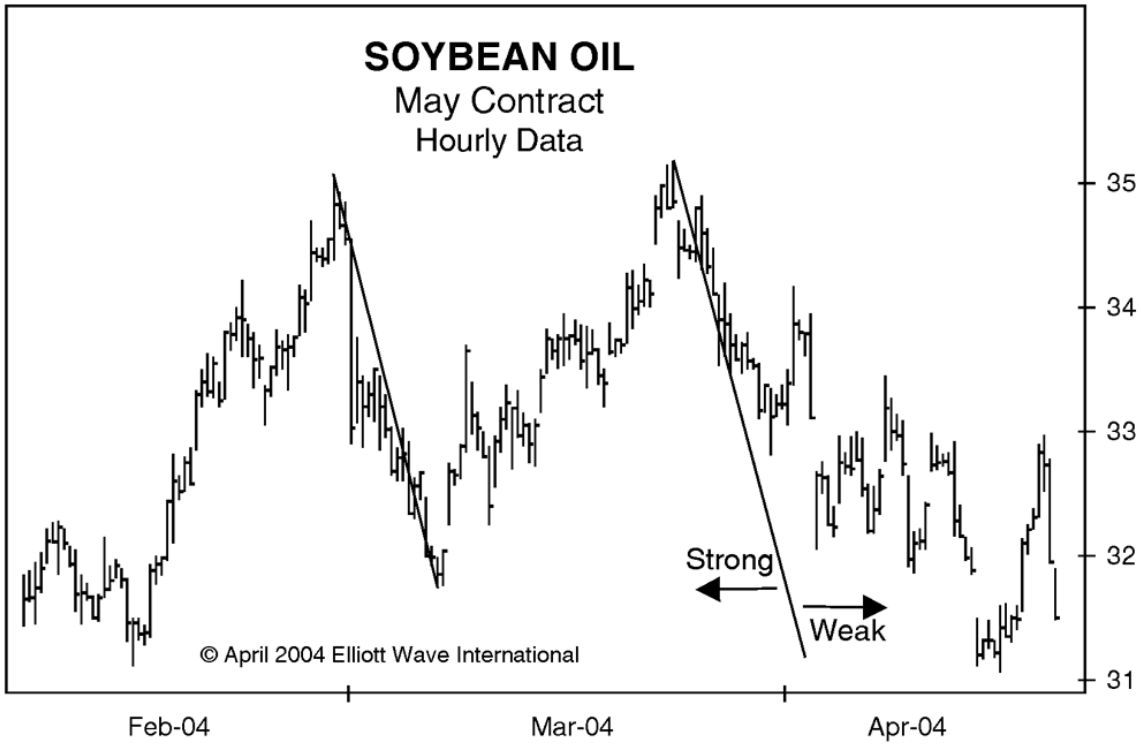

Figure 51

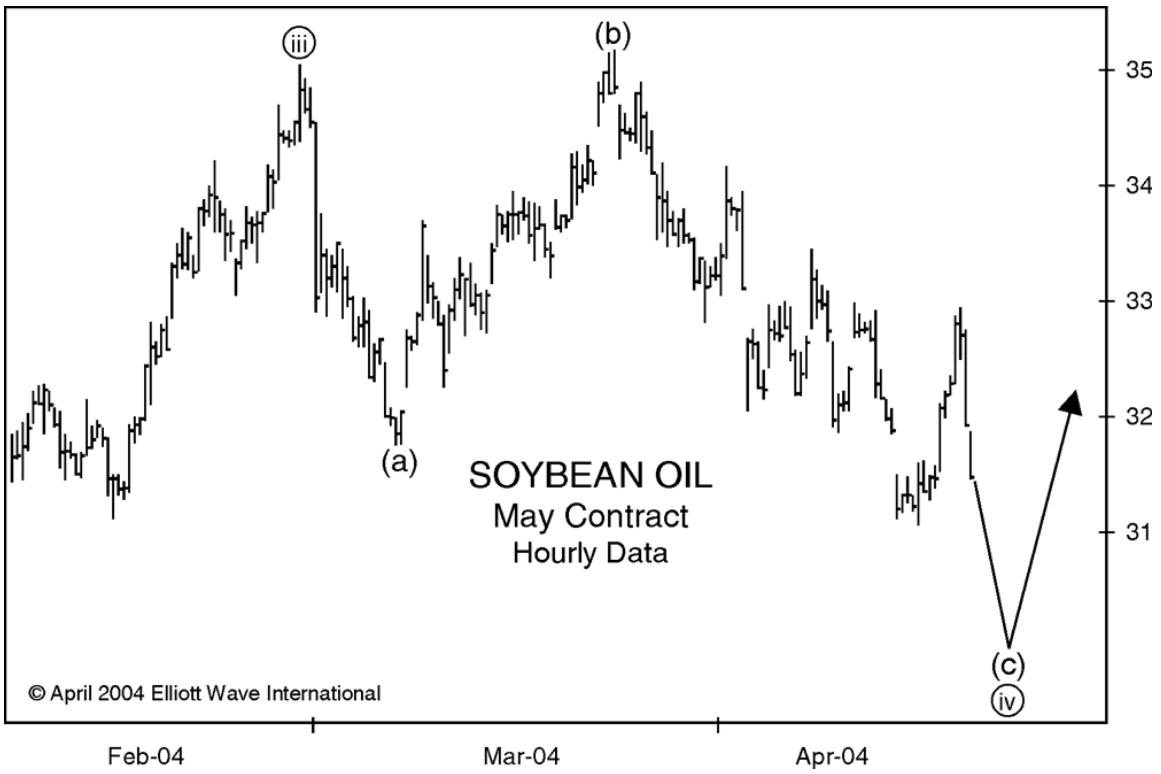

Figure 52

Triple Fan

Figure 53 displays another trendline technique called the "Triple Fan." I picked this up from a wonderful book called *Timing the Market* by Curtis Arnold. I am surprised at how often this tool ushers in significant moves. Down from the September 2003 high in Coffee, three downward sloping trendlines are drawn against peaks 1, 2 and 3; this is your fan. A break of the third trendline often signals a significant move or change in trend, which it did in this case. In December 2003, Coffee gapped above this line and tried to test the top of it before rallying to 80.60.

A similar example is illustrated in Figure 54, June Live Cattle. Beginning with a significant extreme, three downward sloping trendlines are drawn across the tops of three following peaks. Clearly, these lines provided important support during the mad cow incident in December 2003 and the late selloff in March.

In short, even the most basic trendlines are a great analytical tool. They work on any time frame and any market. You can draw them vertically (for timing purposes), horizontally (for marking support and resistance) and diagonally (to identify possible turning points).

Note: A special thanks goes out to that old pro who emphasized the basics and told me about the kid with the ruler, Pete Desario.

[April 2004]

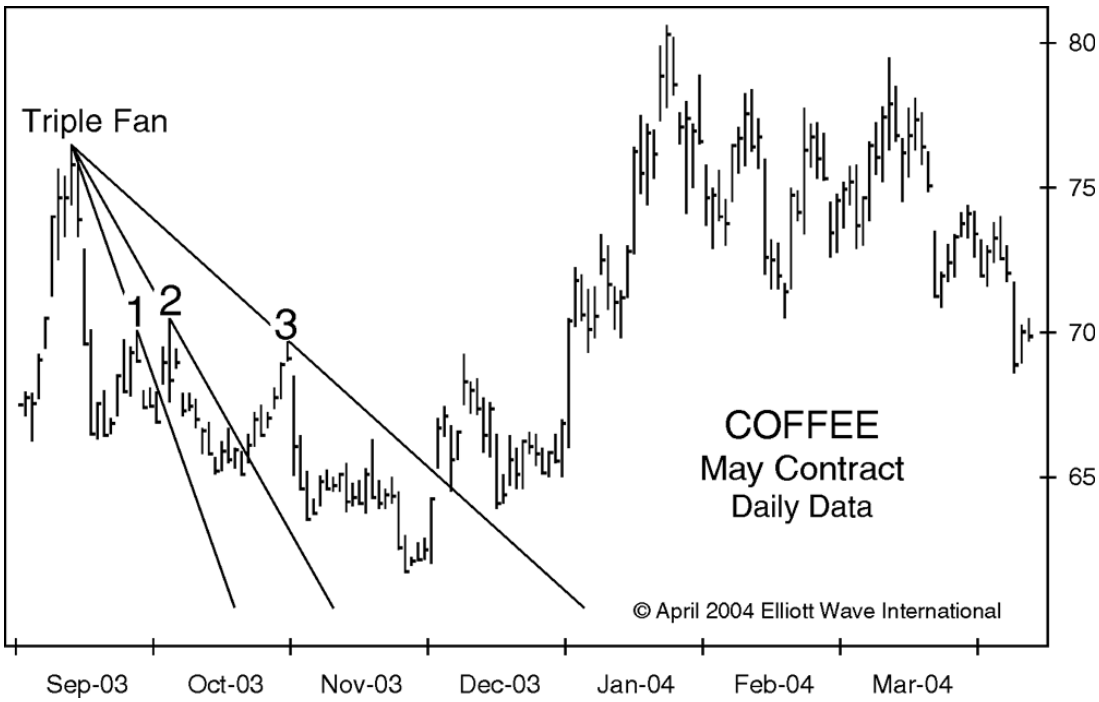

Figure 53

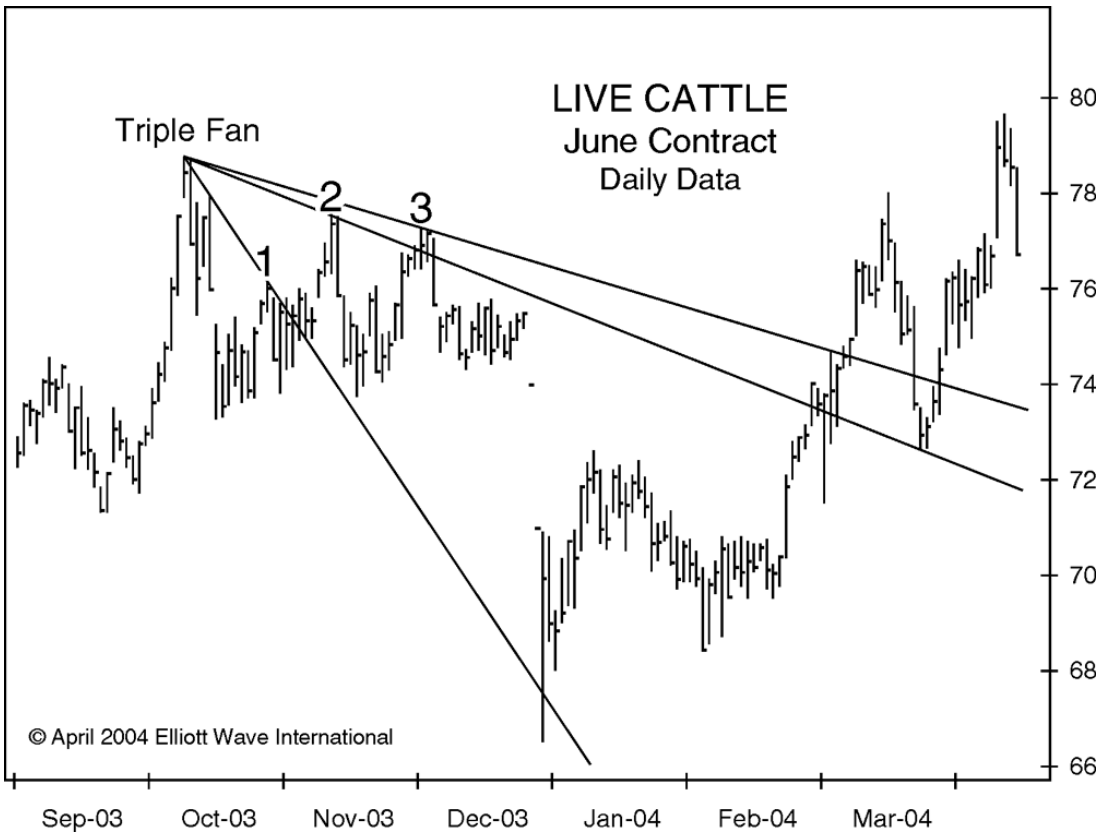

Figure 54

2. How To Use R.N. Elliott's Channeling Technique

Now let's take the subject one step further and discuss R.N. Elliott's Channeling Technique. Elliott saw that parallel lines often mark the upper and lower limits of impulse waves, specifically waves four and five. In other words, prices trend within a channel. And it's a good thing they do, because it gives us yet another reliable method for identifying support and resistance. What's more, a channel's "life-span" – how long price action keeps within its boundaries – speaks directly to how big or small a move to expect once prices have broken the channel and a reversal is at hand.

So here's how you draw them.

First, when you need to identify support for wave four, draw a line connecting the ends of waves one and three (see Figure 55). Then, draw a parallel line that touches the extreme of wave two. These two lines outline your channel, and the lower line shows you the likeliest support for wave four.

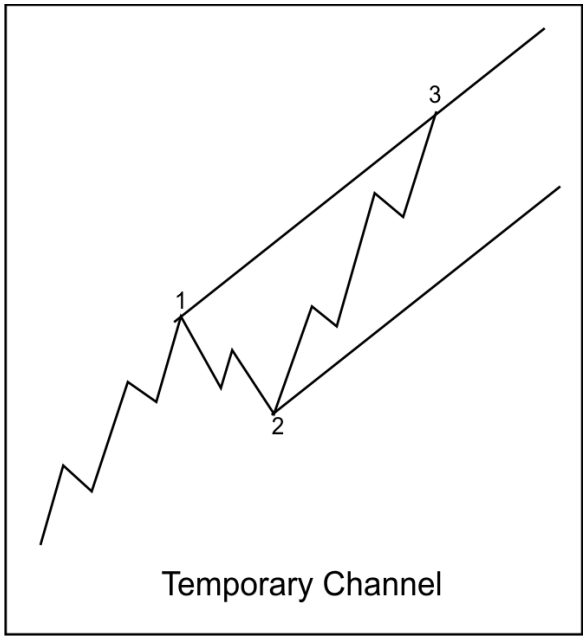

Figure 55

A trick I have picked up over the years is to double the channel (see Figure 56). To do this, place a third parallel line beneath your lower line, at the point where all three lines have equal space between them. The channel width is now double that of the Elliott channel. When your original channel doesn't hold, and evidence continues to argue for a fourth wave, this lower line will provide support.

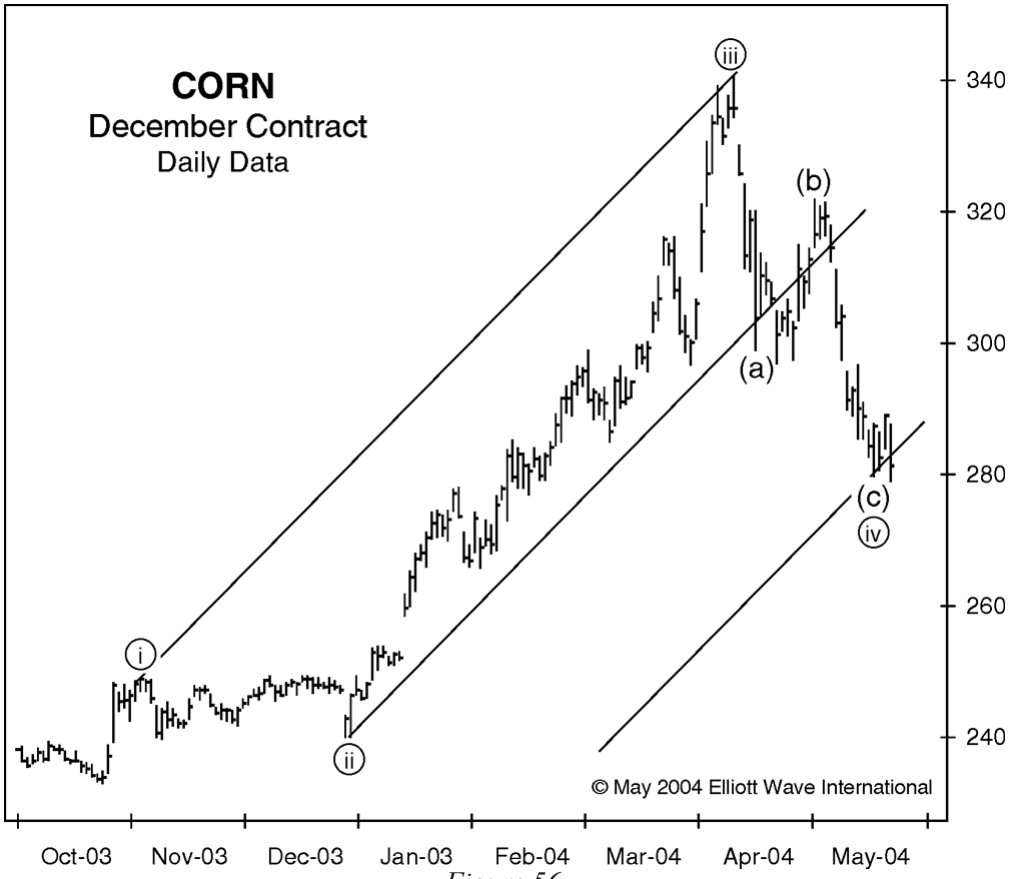

Figure 56

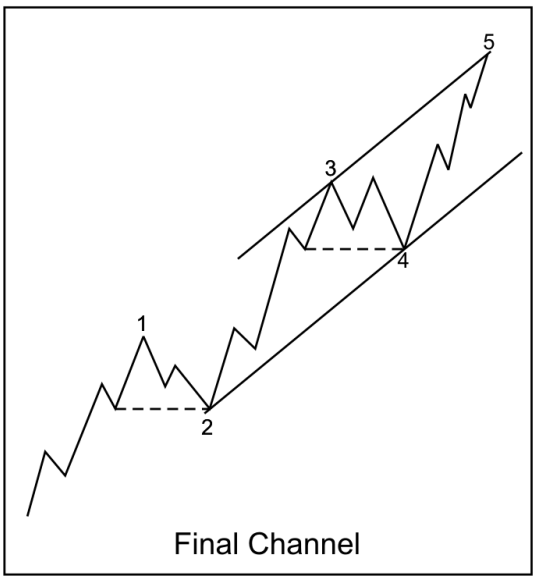

Figure 57

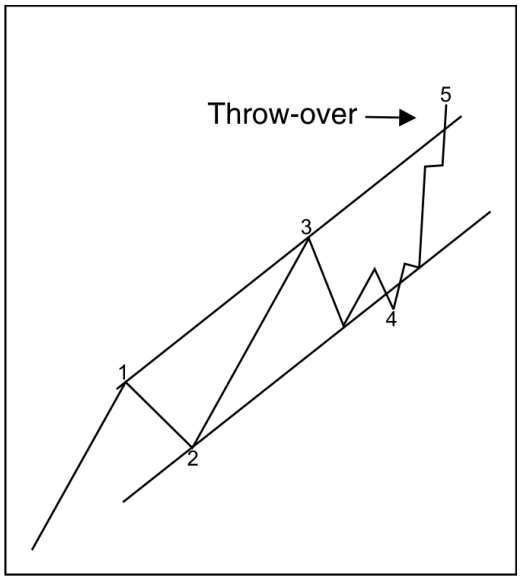

Figure 58

The next channel we'll draw serves to identify a likely target for wave five. Your first line connects the ends of waves two and four. Draw a parallel line at the extreme of wave three (see Figure 57). The upper boundary of this channel identifies fifth-wave resistance. If you're contending with a third wave that is parabolic, then use the extreme of wave one. (Parabolic is simply a term used to describe price action that travels far in a short period of time.)

Fifth waves are tricky, and sometimes prices will exceed this upper boundary line (called a throw-over — see Figure 58) or undershoot it. R.N. Elliott noted this possibility and discovered a significant clue that

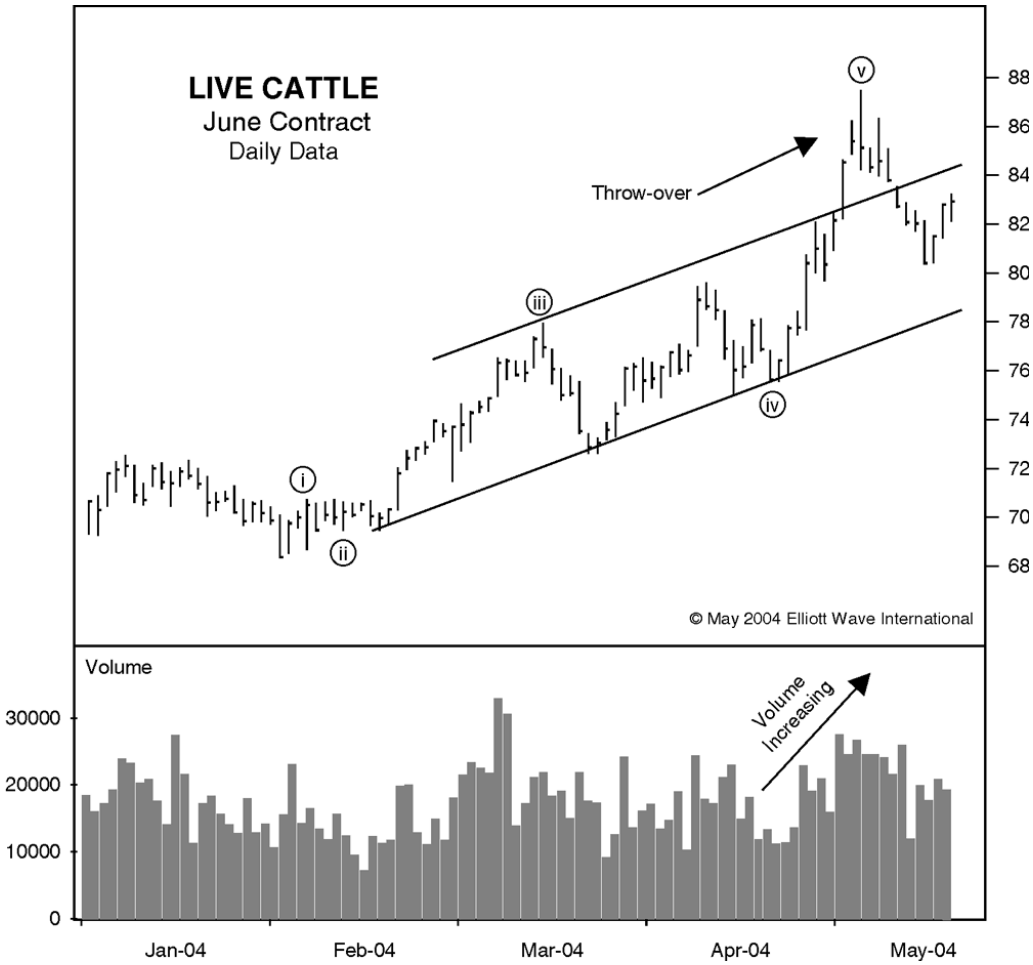

Figure 59

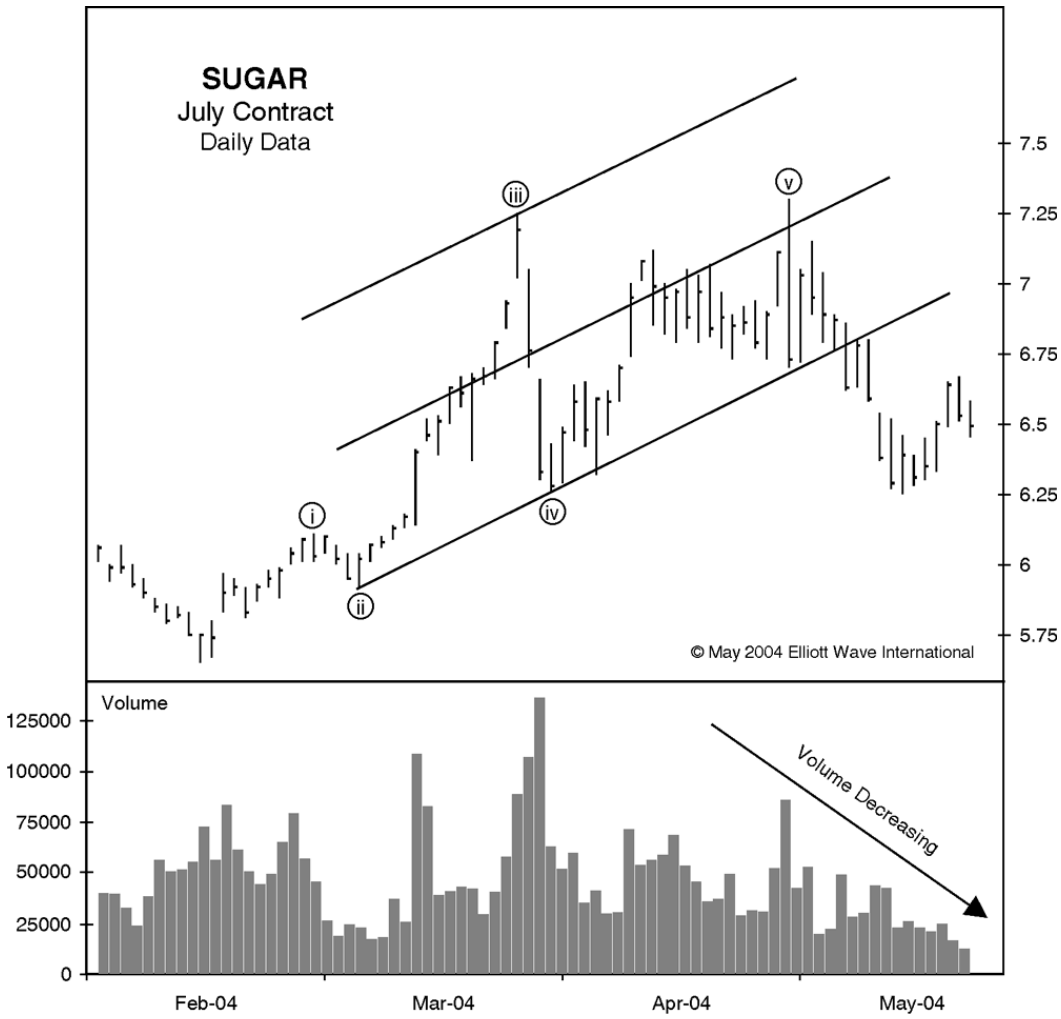

Figure 60

helps determine when a throw-over will or will not occur: Volume. When volume is heavy as prices approach the upper boundary line of the channel, chances are high that a throw-over will occur (see Figure 59). When volume is light, wave five will either meet the upper boundary line or fall short. I've got another hint of my own that may help: when volume is light, the center of the Elliott channel will act as resistance (see Figure 60).

[May 2004]

3. How To Use Jeffrey Kennedy's Channeling Technique

We've now dealt with trendlines and Elliott's channeling technique. Before I move on to a different topic, I'd like to share my own channeling technique.

All too often, Elliotticians balance a bullish wave count with a bearish alternate. It's frustrating to find out that what you thought was wave C was actually wave three. So when does a C wave become a third wave? Or how do you know if the wave 4 you're counting goes with wave 2, and not a smaller or larger degree wave two? I spent years trying to design a tool or technique that would confirm wave patterns and answer these questions. Here's what I came up with.

My theory is simple: Five waves break down into three channels, and three waves need only one. The price movement in and out of these channels confirms each Elliott wave.

Base Channel

Figure 61 shows three separate five-wave patterns with three different channels drawn: the base channel, the acceleration channel and the deceleration channel.

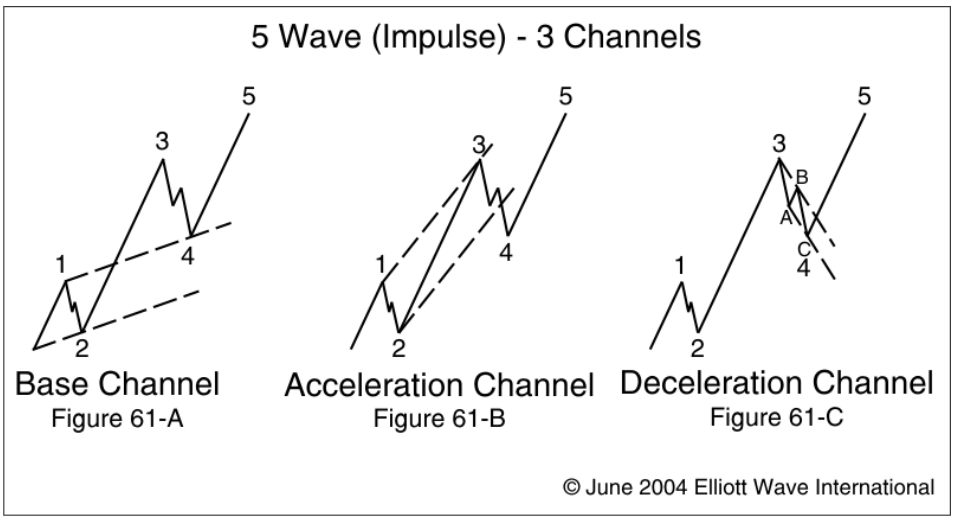

Figure 61

The base channel contains the origin of wave one, the end of wave two and the extreme of wave one (Figure 61A). Of the three channels, the base channel is most important, because it defines the trend. As long as prices stay within the base channel, we can safely consider the price action corrective. Over the years, I've discovered that most corrective wave patterns stay within one price channel (Figure 62). Only after prices have moved through the upper or lower boundary lines of this channel is an impulsive wave count suitable, which brings us to the acceleration channel.

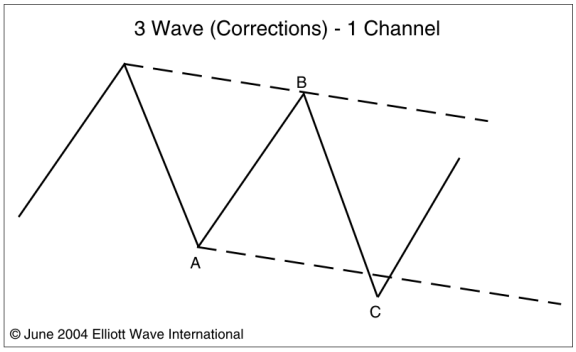

Figure 62

Acceleration Channel

The acceleration channel encompasses wave three. Use the extreme of wave one, the most recent high and the bottom of wave two to draw this channel (Figure 61B). As wave three develops, you'll need to redraw the acceleration channel to accommodate new highs.

Once prices break through the lower boundary line of the acceleration channel, we have confirmation that wave three is over and that wave four is unfolding. I have noticed that wave four will often end near the upper boundary line of the base channel or moderately within the parallel lines. If prices break through the lower boundary line of the base channel decisively, it means the trend is down, and you need to draw new channels.

Deceleration Channel

The deceleration channel contains wave four (Figure 61C). To draw the deceleration channel, simply connect the extremes of wave three and wave B with a trend line. Take a parallel of this line, and place it on the extreme of wave A. As I mentioned before, price action that stays within one price channel is often corrective. When prices break through the upper boundary line of this channel, you can expect a fifth-wave rally next.

In a nutshell, prices need to break out of the base channel to confirm the trend. Movement out of the acceleration channel confirms that wave four is in force, and penetration of the deceleration channel lines signals that wave five is under way. Now for some real examples:

In Figure 62, you can see that most of the January selloff in Coffee was within one channel. Since price action within one channel is typically corrective, I still considered the larger trend up. This approach was helpful in alerting me to a possible one-two, one-two setup in Coffee.

In May 2004, I cited many reasons for a further rally in December Corn. In Figures 63, 64 and 65 you can see the underlying progression of the base, acceleration and deceleration channels and how they supported the wave count.

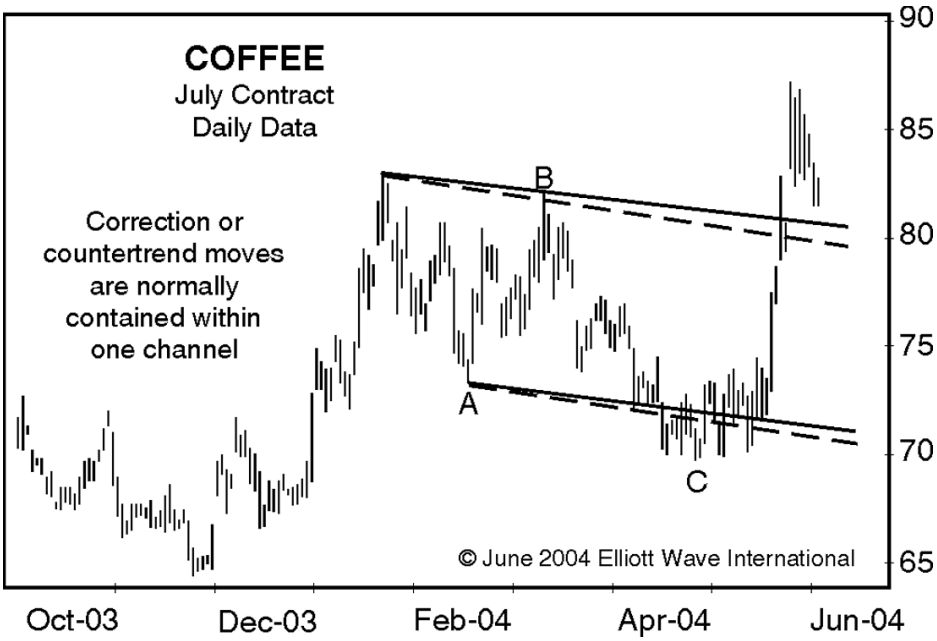

Figure 62

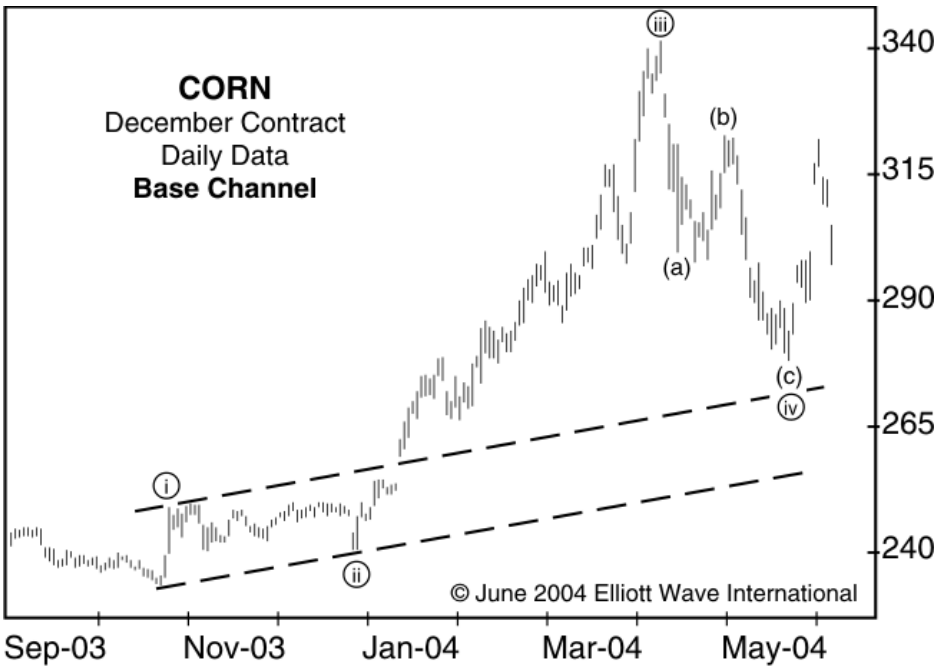

Figure 63

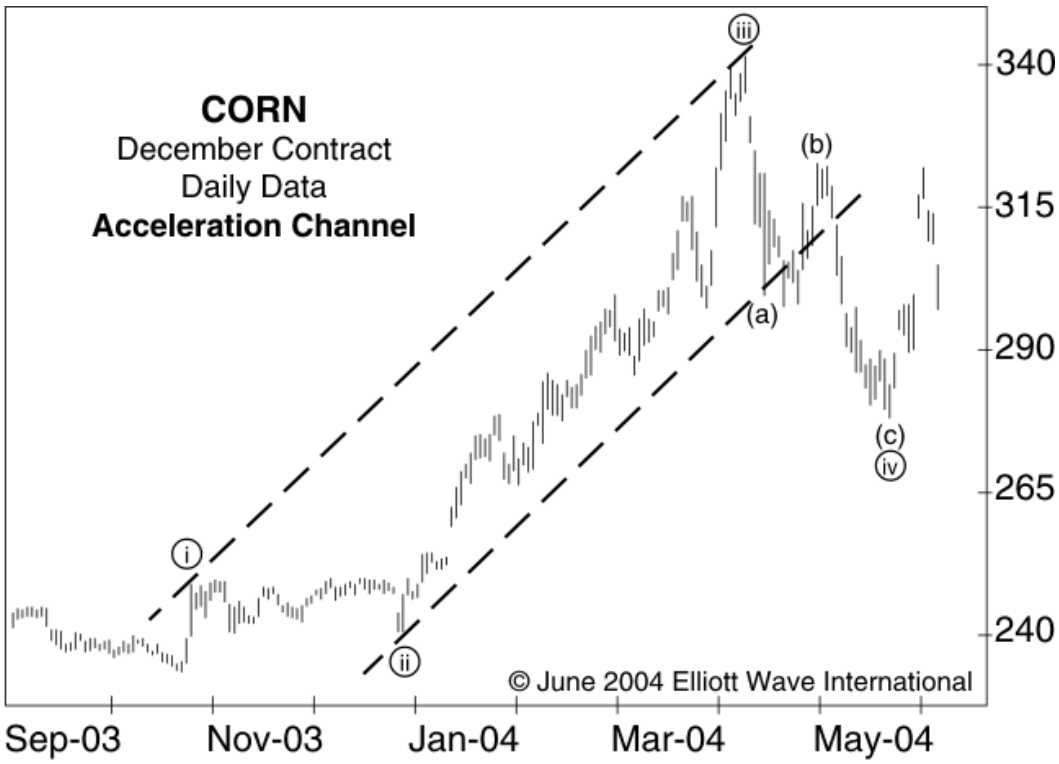

Figure 64

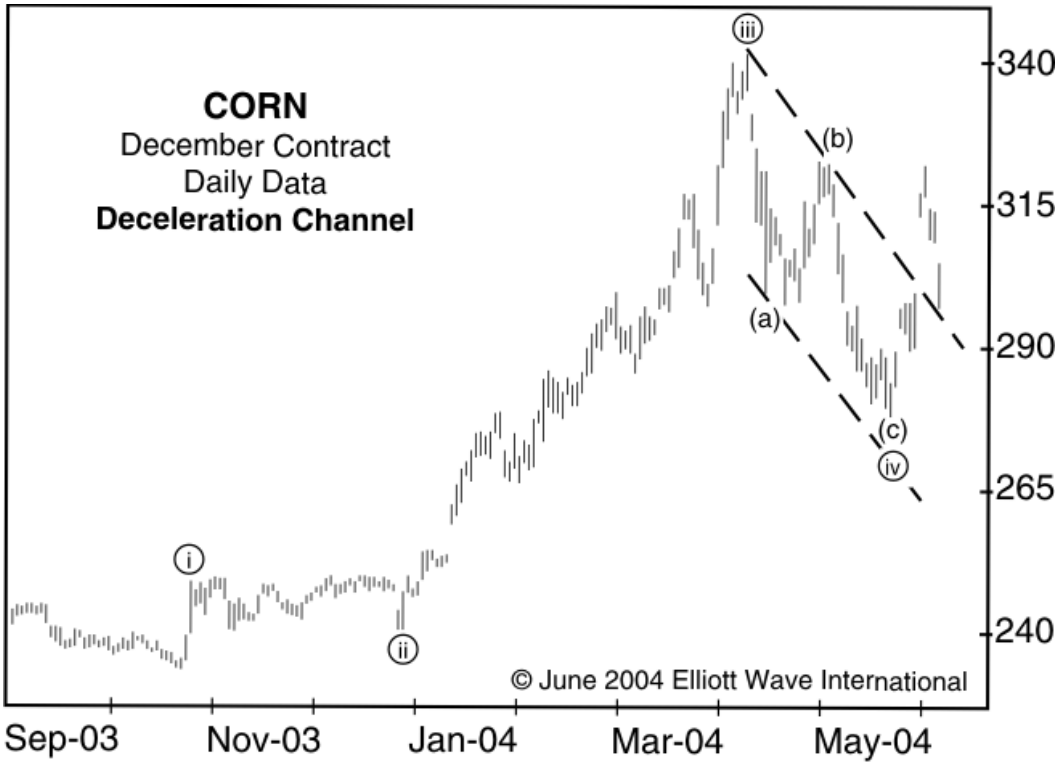

Figure 65

In August Lean Hogs (Figure 66), you'll notice how prices broke the base channel momentarily in wave (c) of 4. Normally, this would be troubling, because the base channel defines the trend. But Figure 68 shows that prices were still within the deceleration channel, which implied the move was still countertrend. A combined break of the base and deceleration channels would have signaled a trend change. And, finally, Figure 69 illustrates how the Elliott wave channeling technique identifies fifth-wave objectives.

As an analyst and trader, I am slow to adopt anything new, yet quick to get rid of anything that doesn't work consistently. I developed this channeling technique in the mid-1990s and still use it today. No, it doesn't always work, but I believe it offers great value in the proper labeling and identification of Elliott waves.

[June 2004]

Figure 66

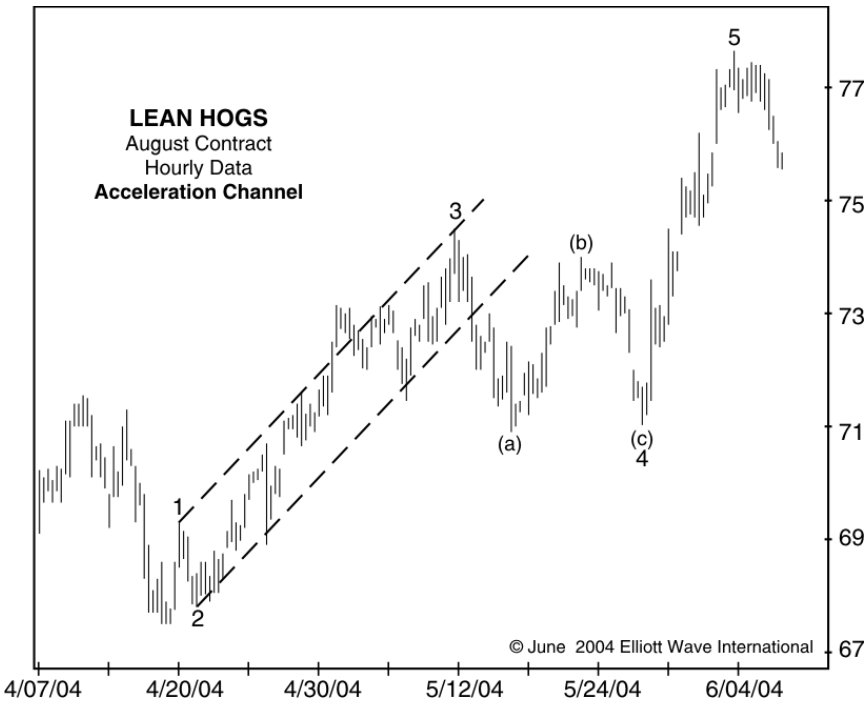

Figure 67

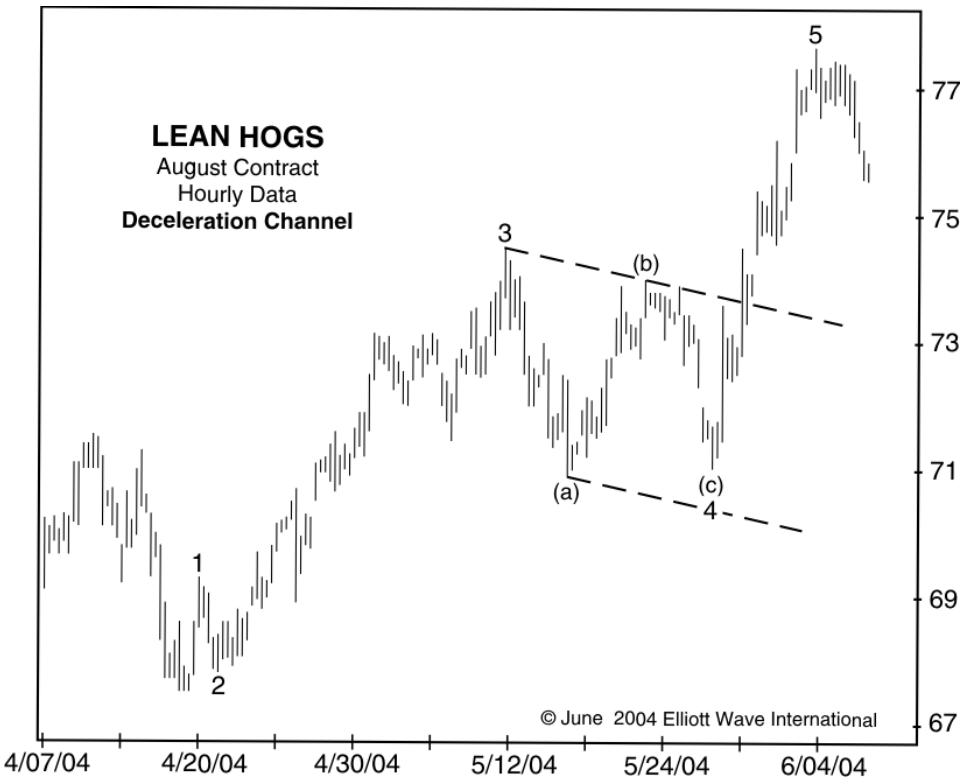

Figure 68

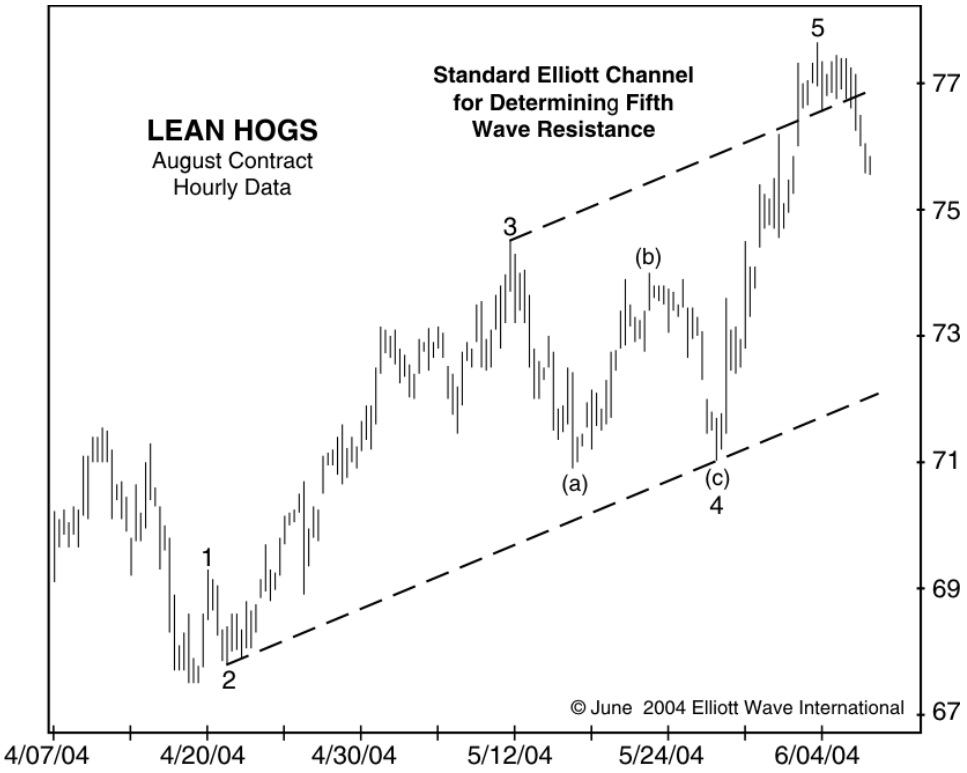

Figure 69

Chapter 7 — Time Divergence: An Old Method Revisited

Old Timers' Method for Finding Trade Setups

Most of you are familiar with what Divergence is. If not, it is simple and intuitive – divergence occurs when an underlying indicator doesn't reflect price movement. For example, a bearish divergence occurs when prices make new highs yet the underlying indicator does not. To clarify this point, I am including a price chart of Cocoa above its MACD (Moving Average Convergence/Divergence) chart to illustrate typical bullish and bearish divergences between the two (Figure 70).

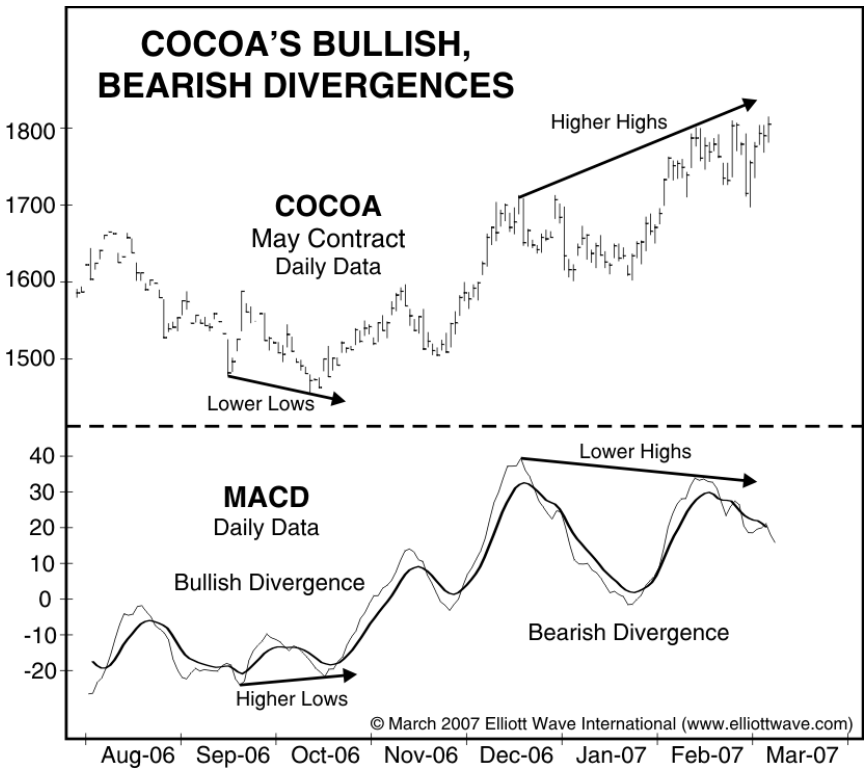

Figure 70

Notice in the lower left hand corner of Figure 70 that in October 2006, Cocoa prices pushed below the September 2006 low. However, the underlying indicator (MACD) registered higher lows during this same period. This condition is referred to as bullish divergence. Indeed, Cocoa prices soon started trending up. Conversely, in February and March, we saw higher prices beyond the December 2006 peak. Yet MACD failed to mirror the price chart and instead registered lower highs during this same period. This bearish divergence suggests an upcoming decline in Cocoa prices.

Now that the explanation of Divergence is out of the way, let me share with you a unique twist on the subject. It's something I call Time Divergence, and it occurs when price extremes in front-month or forward-month futures contracts diverge from price extremes evident in higher time-frame continuation charts.

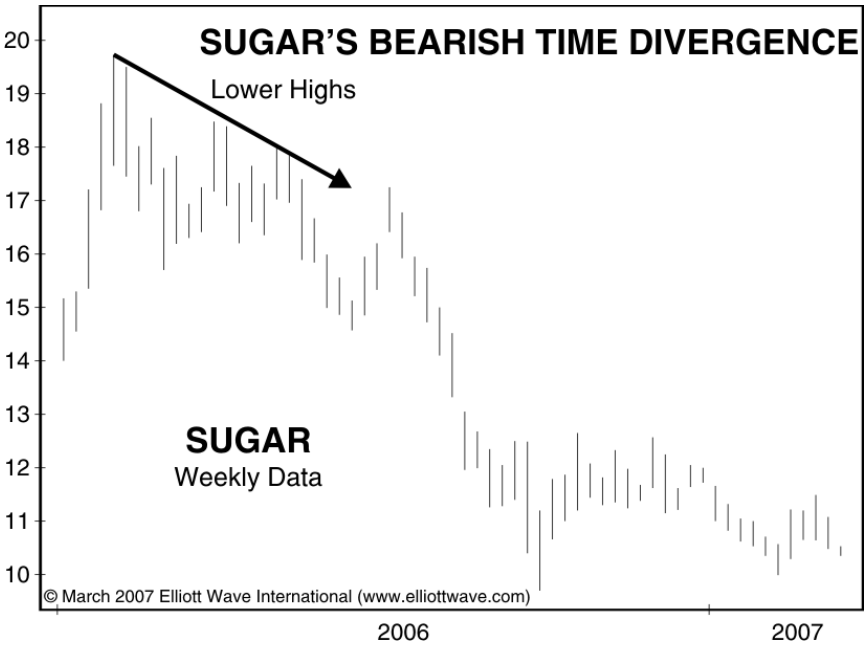

Figure 71

Let me explain. In Figure 71, you can see that in Sugar's weekly continuation chart, lower highs occurred during the

first quarter of 2006. However, the daily data for the May 2007 Sugar contract shows that the opposite occurred, as Sugar posted higher highs (Figure 72). I consider this situation to be a Bearish Time Divergence, and as you can see, it indeed resulted in a steady selloff throughout the rest of 2006.

We can also look at a Bullish Time Divergence condition that occurred recently in Soybean Meal. Notice in Figure 73 that prices registered higher lows in December of 2006, basis the weekly continuation chart. Yet, basis the May 2007 contract, the daily data registered lower lows instead. This Bullish Time Divergence warned of a rally, and that significant rally in Soybean Meal prices actually continued into February of this year.

Now, I would love to say that I dreamed up this technique on my own. But that's not so – all I did was to give it a name. Time Divergence is actually an old-school technique used by many seasoned and knowledgeable traders to identify high probability trade setups. It simply doesn't get written or spoken about that much … but, if you think about, neither did the Elliott Wave Principle until A.J. Frost and Robert Prechter pulled it from obscurity.

[March 2007]

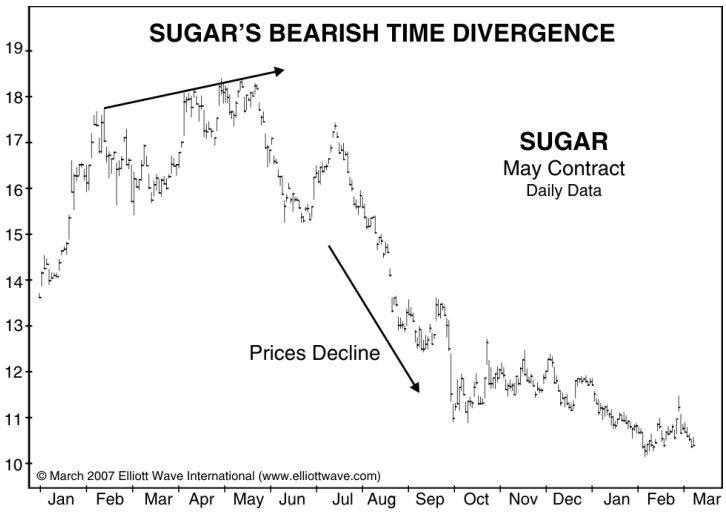

Figure 72

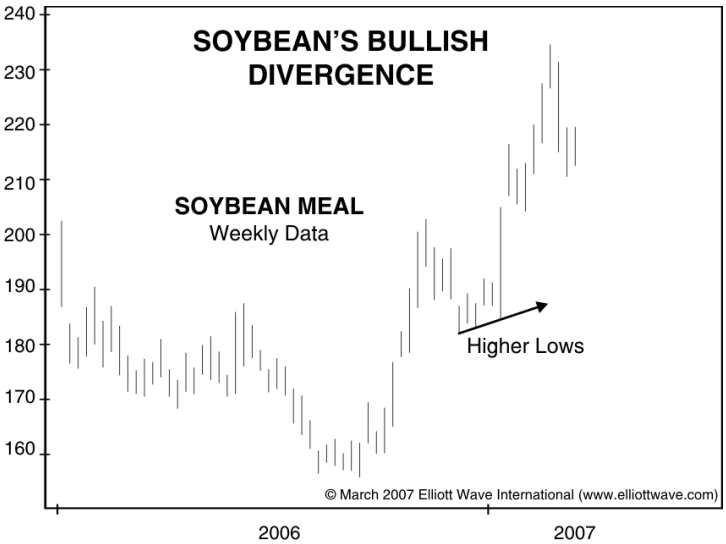

Figure 73

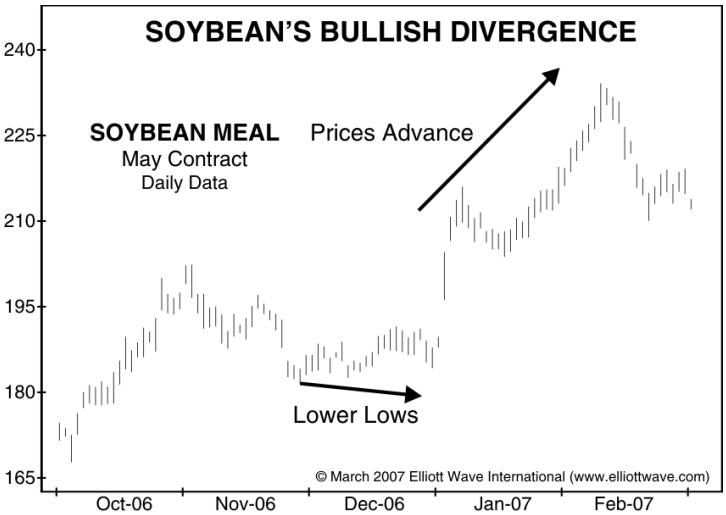

Figure 74

Chapter 8 — Head and Shoulders: An Old-School Approach

Watching This Signal for a Reverse in Trend

After years of chart-labeling and forecasting, I find myself becoming an even bigger believer in the Wave Principle. Even so, while searching for the next big trading opportunity, I use everything from old-school technical analysis to computerized trading systems of my own design. In the old-school area falls the Head and Shoulders pattern, which is a price pattern that often signals a reversal in trend.

I don't know who gets the credit for initially identifying the pattern, but its roots can easily be traced back to Charles H. Dow, Richard Schabacker, Robert D. Edwards and John Magee. The last two names on this list you might recognize as the Edwards and Magee who wrote what some consider to be the bible of technical analysis, *Technical Analysis of Stock Trends*. (First published in 1948, it's a must-read for the serious technician.)

So what exactly is a Head and Shoulders pattern? As you can see in Figure 75, it is a price pattern consisting of three up-and-down moves that make up the Left Shoulder, the Head and the Right Shoulder. The initial price move up is called the Left Shoulder, after which a small correction unfolds and introduces an even higher price high, called the Head. Following the secondary price peak, prices decline and then rally without achieving a new price extreme to complete the Right Shoulder. It's uncanny how similar, both in duration and extent, the Left and Right Shoulders often appear. Once the Right Shoulder has finally formed, a trendline can be drawn connecting the initial reaction low with the one following the formation of the Head – aptly called the Neckline.

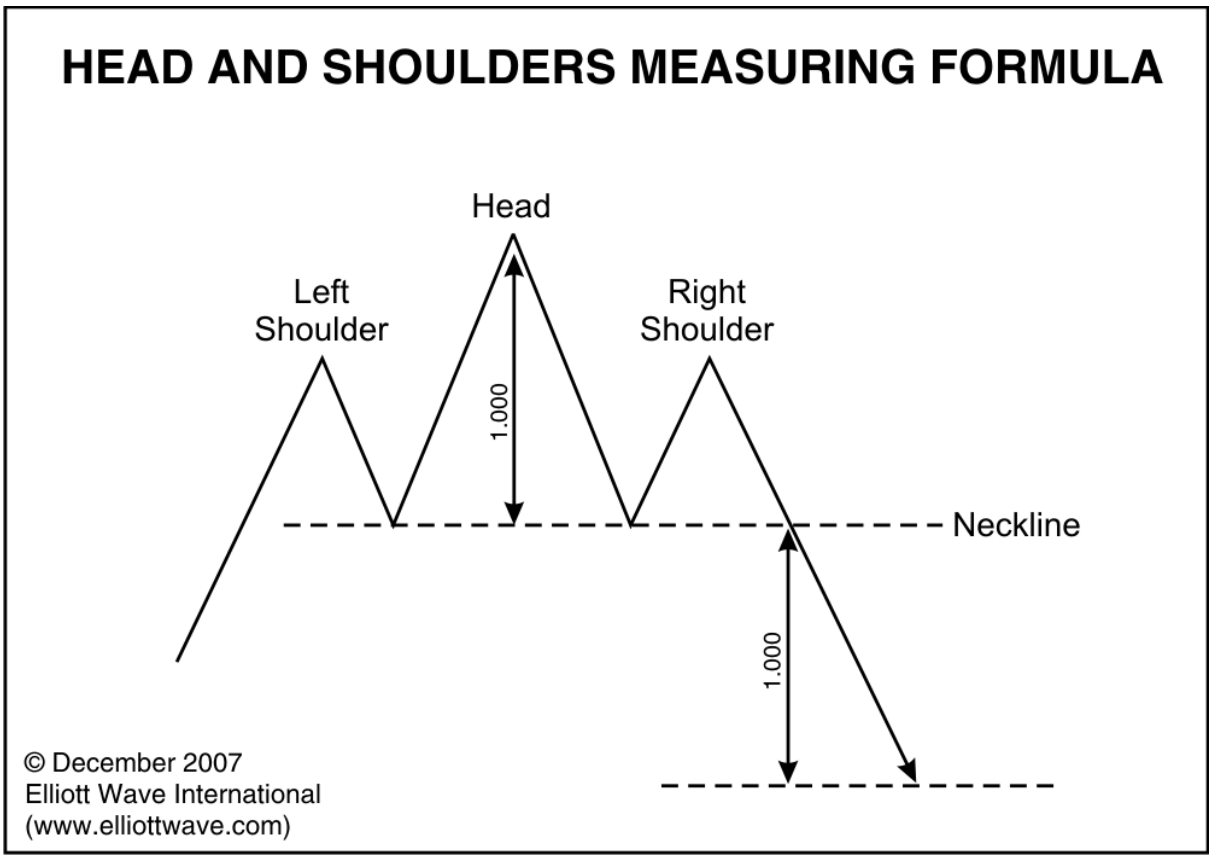

Figure 75

When prices penetrate the Neckline, a change in trend is believed to have occurred, at which point it's possible to apply the Head and Shoulders Measuring Formula. To identify a high probability price target for the move following the break of the Neckline, measure the distance between the Head and the Neckline and then project that distance down from the point at which the Right Shoulder breaks the Neckline. Notice how effective this technique was in identifying the early November low in Feeder Cattle at 107.00 (Figure 76).

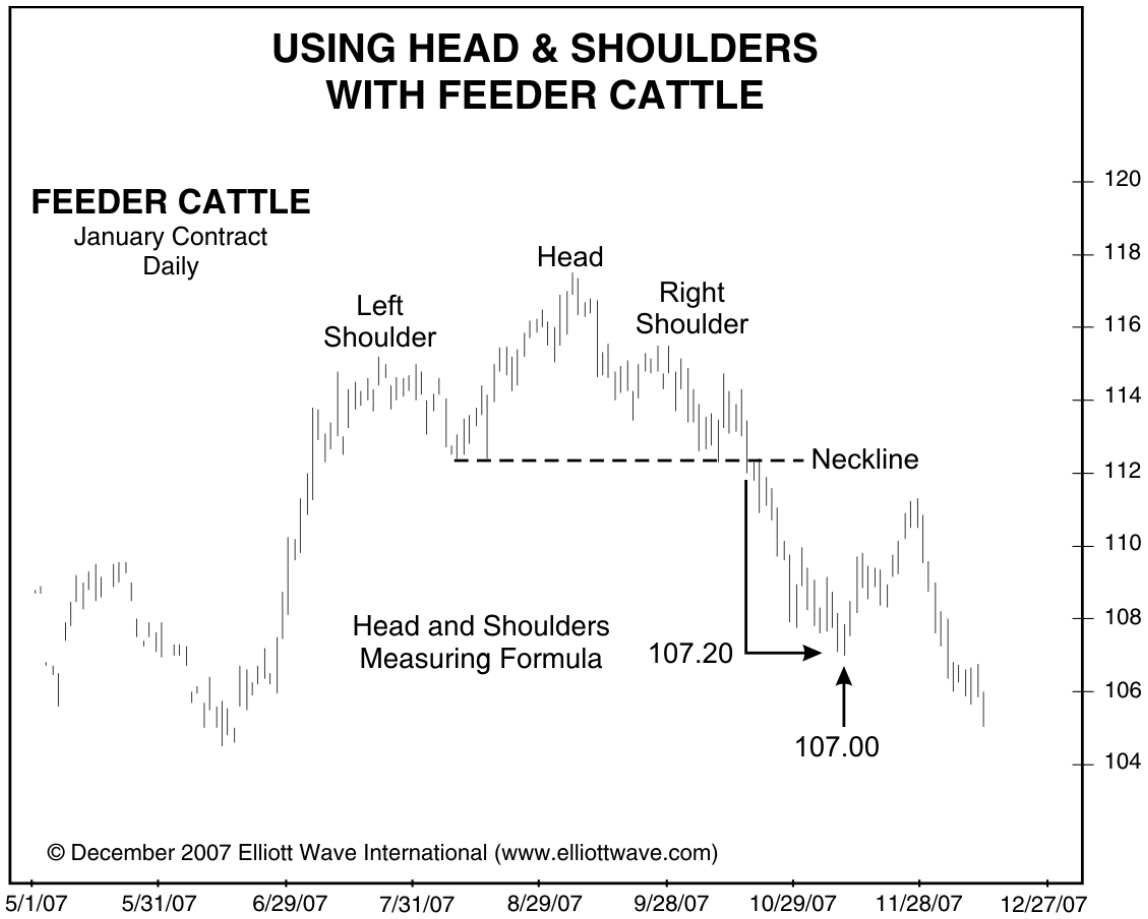

Figure 76

Fitting Head and Shoulders into Wave Analysis

So how does this traditional chart pattern fit into the Wave Principle? Quite easily. Just imagine that the Left Shoulder represents the extreme of a third wave, and its subsequent correction, wave four. Wave five is the Head, and the selloff following the push to new price extremes is either wave A or wave one. The Right Shoulder fits into our basic building block of the Wave Principle by representing a B wave advance or second wave, followed by a wave C or wave three decline, which of course penetrates the Neckline.

Traditional technical analysis fits into the Wave Principle so much so that Robert Prechter has this to say about it in *Elliott Wave Principle* (pg 185).

> "...technical analysis (as described by Robert D. Edwards and John Magee in their book, *Technical Analysis of Stock Trends*) recognizes the 'triangle' formation as generally an intra-trend phenomenon. The concept of a 'wedge' is the same as that for Elliott's diagonal triangle and has the same implications. Flags and pennants are zigzags and triangles. 'Rectangles' are usually double or triple threes. 'Double tops' are generally caused by flats, "'double bottoms' by truncated fifths."

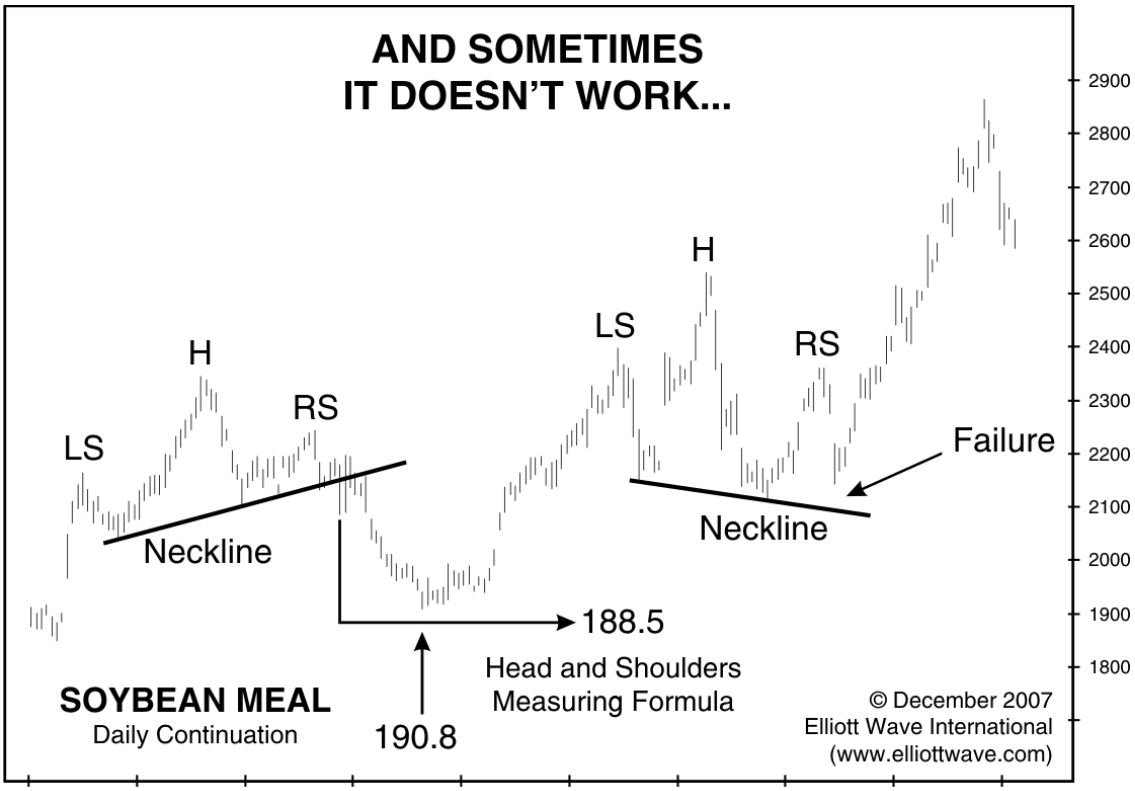

Figure 77

It is important to remember that no chart pattern, indicator or trading system is going to be 100% accurate. For example, in Figure 77 (Soybean Meal), the Head and Shoulders pattern that occurred in early 2007 did an excellent job of indicating the April selloff and its likely extent. However, the Head and Shoulders pattern that formed in June, July and August initially appeared to foretell a bearish change in trend that did not transpire. In fact, this particular pattern introduced a sizable advance in Soybean Meal prices instead.

Final Note

They say a cat has nine lives and that there are numerous ways to skin one. (And just so that I don't anger PETA, the previous sentence is just a figure of speech, and I would absolutely never skin a cat or even think about testing the nine lives theory.) My point is that there are many ways to analyze financial markets and that no one technique or approach is infallible, whether it's old school or new school. What is most important though is that you adopt a style of analysis that works best for you.

[December 2007]

Chapter 9 — Pick Your Poison... And Your Protective Stops

Four Kinds of Protective Stops

I have wanted to talk about protective stops for a long time in Trader's Classroom, because they are one of the most difficult aspects of successful trade management. Why? Because if a protective stop is too tight, chances are you'll get stopped out of a trade right before the big money move you were looking for. Conversely, if a protective stop is set too far away from where prices are currently trading, it opens you up to unnecessary market risk.

Now before I offer my 2 cents on the subject, what exactly are protective stops? Protective stops are part of a strategy that aims to limit potential losses by setting a sell stop if you are long or a buy stop if you are short. Some traders strongly advocate using them, primarily because protective stops saved their trading accounts on more than one occasion. Other traders don't use them at all, because they believe that having a protective stop in place simply gives floor traders (locals) in the pits something to gun for, a practice referred to as "stop running."

What exactly is stop running? It happens when floor traders who think they know where most of the resting buy or sell stops are located in a given market try to take profits by attempting to push prices into those stops, setting them off, and then letting the corresponding price move run its original course. Some say stop running is a myth, but on more than one occasion, I had my own positions stopped out by two or three ticks only to see prices return to moving in the direction I expected them to. Now, over the years of analyzing and trading, I've examined a number of different protective-stop techniques. Of the four I describe here, you will probably recognize two. The other two are personal favorites that I have developed.

1. Parabolic

The Parabolic System, also called the Stop and Reverse (SAR) System, was created by Welles Wilder (Figure 78). The essence of the Parabolic System is that it incorporates not just price but also time. So once a trade is initiated, it allows time for the market to react to the change in trend and then adapts as the trend gets underway. Simply put, when a change in trend occurs, the protective stop is far away from the actual market price, but as the trend develops over time, the stop progressively tightens, thereby protecting accrued profits.

My 2 cents: Overall, I like Parabolic as a protective-stop technique, and I applaud Mr. Wilder for his genius. However, personally, I like my protective stops just a little bit tighter than what Parabolic sometimes offers.

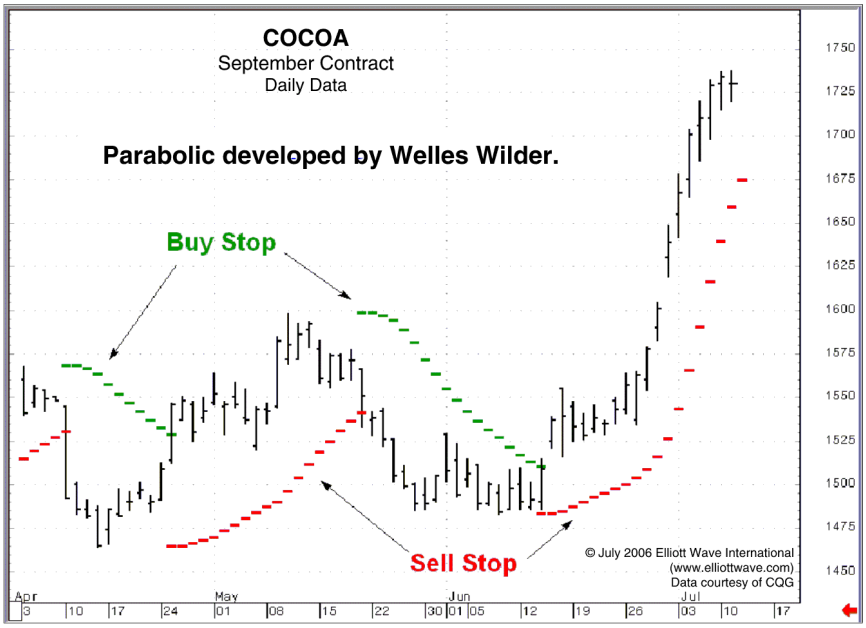

Figure 78

2. Volatility Stop

The Volatility Stop is a component of the Volatility System, also developed by Welles Wilder. It is based on a volatility index made up of the ongoing calculated average of True Range. (The True Range is always positive and is defined as the highest difference in value among these three values: today's daily high minus today's daily low, today's daily high minus yesterday's closing price, and today's low minus yesterday's closing price.)

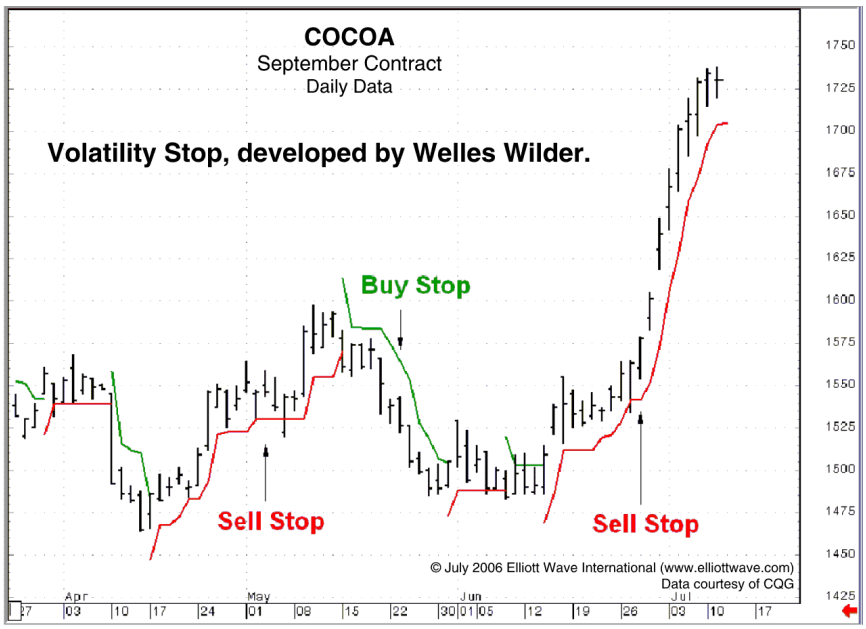

Figure 79

My 2 cents: The Volatility Stop is a bit more to my liking, especially when penetrated on a closing basis. As you can see in Figure 79, the protective stop identified by this technique is much tighter than the levels offered by Parabolic. And while this approach to identifying protective stops is excellent in trending markets, when a market is not trending smoothly, the result is whipsaws – something we saw in the first few weeks of trading in Cocoa in early June.

3. Three Period High-Low Channel

The Three Period High-Low Channel isn't the brainchild of any one analyst but stems from my own observation of what I consider to be tradable moves. A tradable move is a move where prices travel very far very fast (i.e. impulse waves). And as you can see in Figure 80, since the June advance began in Cocoa, prices have consistently remained above the three-period low channel. What exactly is a high-low channel? It's a channel that marks the highest high and lowest low within a specified period of time, in this case three periods.

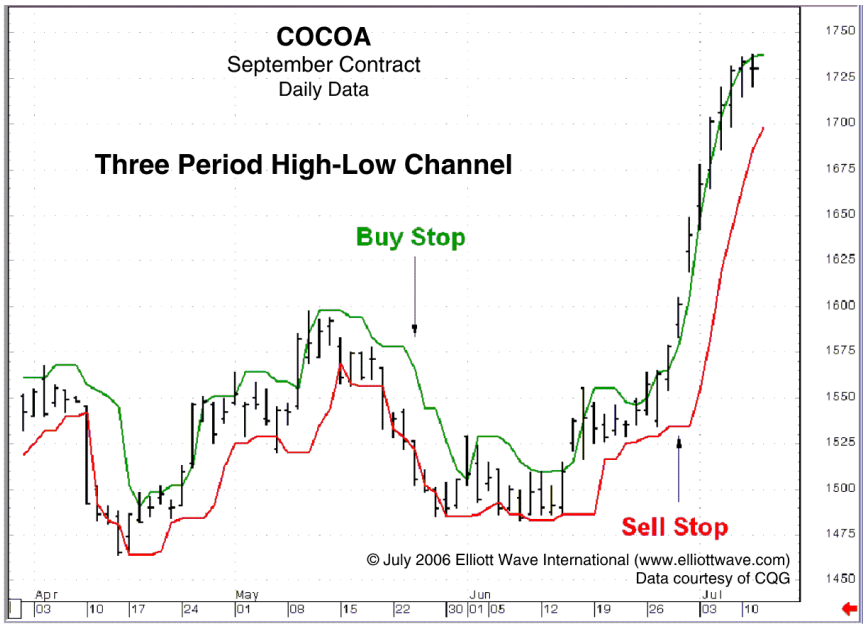

Figure 80

4. Five-Period Simple Moving Average

Here's another observation in my ongoing analysis of tradable moves: I notice that when a market trends, its closes tend to stay above a five-period simple moving average of the close. And as you can see, the levels identified in Figure 81 are significantly tighter than the levels in any of the preceding price charts. So as not to miss out on a developing trend, I often set a protective stop a few ticks above or below the high of the first bar that successfully penetrates the five-period moving average on a closing basis.

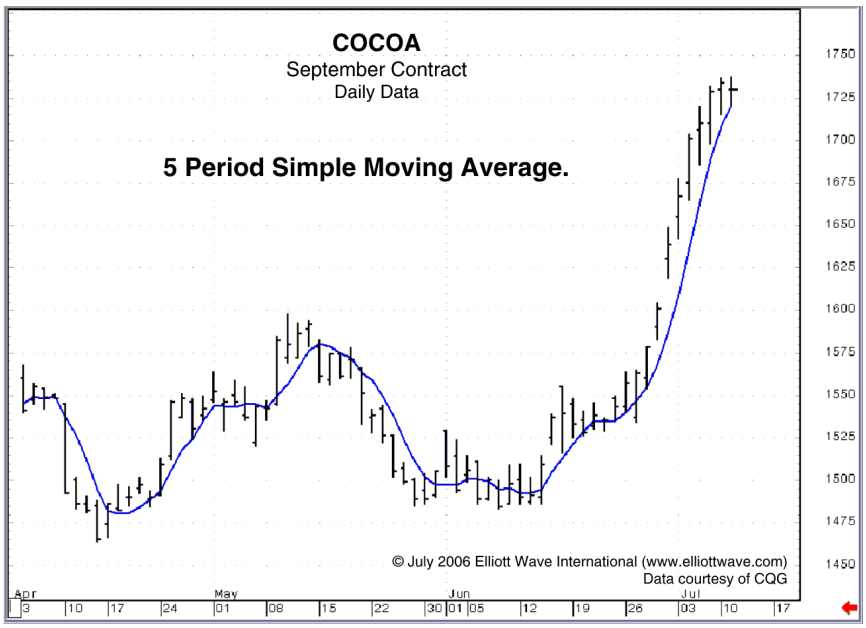

Figure 81

My 2 cents overall: As a result of many years in search of the perfect protective-stop technique, I have discovered that there isn't one. So when deciding which stopping technique to employ, I suggest you choose one that matches your own trading style best.

My best advice: If there is a single gem I can offer in regard to using protective stops, it is this: If you're confident about a trade, give it plenty of breathing room. If you're not, then keep your protective stops tight.

[July 2006]

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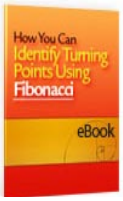

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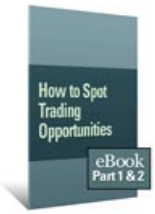

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