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The THREE SECRETS to TRADING MOMENTUM INDICATORS

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Table of Contents

Preface

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Introduction

I've started writing this book more times than I care to remember. And that's probably because it took me awhile to fully realize what it was I wanted to say about technical analysis in general, and momentum indicators specifically.

There are three things about technical analysis and momentum indicators that many traders either are not aware of, or continue to ignore. These three "secrets" of momentum indicators are what this book is all about. In some ways, these three secrets will support conventional wisdom about price action, momentum, and technical trading. In other ways, I think these secrets will come as a surprise to many market technicians—and will be a worthwhile introduction for newcomers.

In either event, my hope is that by revealing and discussing these secrets, the average chartist and trader will be able to make better use of momentum indicators and become a more confident and profitable market technician.

Here are the three secrets of momentum indicators:

1. The best indicator of momentum is price action. And the best way to read price action is by way of Japanese candlestick charting.
2. Some of the most popular momentum indicators—such as the stochastic oscillator—are far more effective when used differently from the way most traders use them.

3. "Trend sensitive" indicators such as moving average trios, the moving average convergence-divergence histogram (MACDH) indicator, and the triple-smoothed exponential moving average (TRIX) are among the most valuable tools for the momentum technician.

These are the three secrets that this book will share. I will also spend some time talking about the origins of momentum indicators like rate of change, as well as how some of the standard momentum indicators such as the Relative Strength Index (RSI) are traditionally used.

Most of the book, however, will be spent on the above three secrets that can help momentum technicians make the most out of the momentum trading opportunities that develop every day, every hour, and every minute in the financial markets—from stocks and bonds to futures and international currencies.

Traditionally, momentum indicators have been in a tricky position. The standard criticism of technical indicators is that they lag price action and thus tend to provide trading signals that are too late. This, for example, explains the widespread preference for exponential moving averages, which weigh recent price action more heavily than older price action, over simple moving averages, which treat all price action equally.

Momentum indicators, on the contrary, are generally regarded as leading indicators. By leading, the inference is that momentum indicators are better able to anticipate price than other indicators, such as trend indicators (i.e., moving averages). Momentum indicators are said to anticipate prices by letting technicians know when a given market is overbought or oversold and likely to reverse.

Unfortunately, the traditional use of overbought and oversold conditions as trading signals is a complicated one. As I will show later in the sections on stochastics and RSI, the way that most technicians use these indicators actually works against the capacity of the indicators to lead prices. In other words, it is not so much that momentum indicators do a poor job

as leading indicators. Rather, the problem is that too many technicians allow the momentum indicator to lead them in the wrong direction!

All of this builds to the most important conclusion of this book: **there is no faster trading signal than price action properly interpreted.** And for the momentum trader who looks to maximize reward versus risk (to be long on the up days and short or out on the down days), the sooner the signal is received, then the sooner the high reward/low risk trade can be made.

This is true whether or not the trader is looking to exploit a surge in momentum by buying a breakout or selling a breakdown. This is true whether or not a trader is looking to exploit a temporary drop in momentum by buying a dip or selling a bounce. This is true whether or not a trader is looking to exploit the exhaustion of momentum by buying a bottom or selling a top.

This is why I am making a big deal out of Japanese candlestick charting. While it is true that there is much more familiarity with Japanese candlesticks today in 2009 than there was ten years ago, it remains the case that many technicians use candlesticks sloppily or inaccurately. It probably would not be too much to say that too many traders have become as lazy with Japanese candlesticks as they have with their momentum indicators!

Japanese candlesticks are powerful tools for market technicians—arguably, they represent the "best thing since sliced bread" of technical analysis. But used incorrectly, Japanese candlesticks can be just as destructive to accurate analysis and trading as any other technical tool. In fact, it might be the case that misusing Japanese candlesticks is more dangerous because their apparent simplicity can lead technicians to think they know more than they do about how to use and not use Japanese candlesticks.

I've already warned that some of the most popular momentum indicators are being used in ways that do not maximize their utility as momentum indicators. The primary problem, to put it bluntly, is a tendency to panic when momentum indicators reach "extreme" levels of overbought and oversold. While I will present a completely different way for momentum traders to think about overbought and oversold market conditions in the course of this discussion, I also want to point out here that many of the problems of momentum indicators are solved by working back toward the way that moving average-based indicators, typically considered "trending indicators," inform traders about price.

One example of a very effective moving average-based momentum indicator is the triple-smoothed exponential moving average, or TRIX. This indicator, developed by trader and founder of *Technical Analysis of Stocks & Commodities magazine*, Jack K. Hutson, has both of the key advantages that a quality momentum indicator must have.

One important condition is that the momentum indicator must alert traders to momentum opportunities while momentum is still increasing rather than cresting. The second important condition is that the momentum indicator must allow the trader to remain in the trade when there are drops in momentum that are not necessarily reflected in price.

The TRIX indicator (more will be discussed in a later chapter) takes an exponential moving average (A), then takes an exponential moving average of that initial moving average (B), and then takes an exponential moving average of that already twice-averaged moving average (C). The trader then takes a one-day rate of change measurement of C.

As Hutson wrote of his indicator nearly 30 years ago (1982):

> *While this oscillator is not the answer to all our trading prayers, it certainly is an improvement over many. It contains two essential ingredients required in stock or commodity trading: a filter of random market noise, and a positively timed signal.*

The TRIX does more than this. In a follow-up article (1983), Hutson noted that:

> *TRIX reacts very fast and displays occasional leading divergence from daily price highs and lows. This is because TRIX may also be thought of as a smoothed-out one-day momentum (indicator).*

As you may already notice, the TRIX indicator takes into account trend characteristics by way of the exponential moving averages of price, and momentum characteristics by way of the rate of change adjustment. This is part of what makes TRIX—and other momentum indicators that are either similarly constructed (such as the moving average convergence divergence indicator) or similarly interpreted—so valuable to momentum technicians.

Although arguably one of the best examples of what I mean by momentum and moving average based indicators, the TRIX is far from the only example. In addition, much of what technicians need to do when using momentum indicators can be done with traditional momentum indicators like the stochastic. And, indeed, many of the traditional methodologies for using such indicators, such as locating the sort of divergences from price that often anticipate reversals, are still important and must be considered by technicians looking to make maximum usefulness of momentum and momentum indicators.

But because traditional momentum indicators, and traditional ways of using them, have often failed traders during certain market conditions such as strongly trending markets, it becomes important for momentum traders to discover other ways that the "bugs" of momentum indicators can be turned into "features" when viewed and used properly. Again, the stochastic oscillator will be the chief witness for my prosecution of this particular case.

Lastly, it is important to remember that all technical indicators are derivatives of price. Indicators can reveal aspects of price that may not be readily apparent. But, believe me, the information is there. This, again,

is why I am including a discussion of Japanese candlesticks and chart patterns in this larger discussion about momentum indicators and technical analysis.

The sooner a technician is able to observe momentum in a price chart, however much that observation may be confirmed or clarified by the right technical tools, the more time he or she will have to analyze the market to make the best, most timely, trading decision possible. Recognizing basic candlestick patterns and the environments in which they appear is a fundamental part of developing this ability to "see" momentum.

There are a few things this book is not. This book is not an encyclopedia of momentum indicators, nor is it a scholarly text on technical indicators. This is first and foremost a book about using technical indicators to analyze momentum. And, as far as I'm concerned, the simpler the technical tool, the better.

I have never been impressed by the tendency among some technicians to complicate technical analysis. Every time I come across a new, complex mathematical model for trading, I remind myself that traders were making good money in the markets long before the advent of artificial intelligence or computers. And until the markets are moved by something other than human nature, the old-time trading religion of fear and greed is good enough for me.

Computers are an invaluable tool for the 21st century trader. But technicians, like everyone else, need to be wary of the capacity of technology to dazzle and distract attention from the task at hand. One of the saddest things to see is a technical trader so obsessed with calculating the number of angels on the head of an oscillator, that he loses track of the fact that the point of all that calculus was to trade.

So in the following pages I will talk about what momentum is and why traders look to exploit it. I will talk about three different ways of looking at momentum trading: breakout trading, reversal trading, and swing trading. I will talk about the most basic tool of the momentum trader:

the candlestick chart. I will talk about what is arguably the most popular momentum indicator, the stochastic oscillator, and how it can be used in ways more effective than those commonly practiced.

Last, I will talk about how momentum traders can effectively use "trend-sensitive" technical indicators like TRIX, the moving average convergence-divergence histogram (MACDH), and the moving average trio.

While this book is not a book about money management, trade examples will highlight aspects of both trade and money management that are important for momentum traders to keep in mind. Additionally, while the methods described here are most accurately referred to as (to borrow a phrase from Market Wizard, Linda Bradford Raschke) "systematic discretionary methods," many techniques, such as the BOSO method using the stochastic oscillator, are very much amenable to inclusion in an automated trading system.

Chapter One:
History of Momentum Indicators

In a book about technical indicators, it is worthwhile to discuss briefly the terrain in which the indicators work: the price chart.

The price chart is the hallmark of technical analysis. It is what distinguishes market technicians who focus on price, from market fundamentalists, who focus on various accounting metrics found in corporate balance sheets and income statements. A number of technical traders have articulately explained the difference between market technicians and market fundamentalists. But one of my personal favorites is the explanation provided by author, trader, co-founder of Pristine.com, and current CEO of Velez Capital Management, Oliver L. Velez (2000):

> *"Price charts do nothing more than graphically display what we call the "footprints" of money. They show human psychology at work and the repetitive cycles of fear, greed, and uncertainty. What we have always liked about charts is that they are factual …*
>
> *… Earnings reports can paint a false picture with the help of fancy accounting, but charts don't lie. A CEO can hold a conference and boldly issue inaccurate statements about a company, but the chart, my friends, won't ever lie. Investors and traders, both large and small, bet with their money, not with their mouths … Each bet is what actually makes up the chart. Charts don't lie. "*

I quoted Velez at length because what he wrote goes to the heart of what makes a market technician. As Velez points out elsewhere in his book, *Tools and Tactics for the Master Day Trader*, relying on the bets that appear on price charts does not mean that those bets will always be correct. But market technicians can be assured that those bets do represent "true convictions…true beliefs." By contrast, I have seen a number of very talented, very widely-followed market fundamentalists falling on their swords because they were taken in by the charisma of a certain CEO with a winning smile and a gift for gab, or were just swept up in the enthusiasm for a new product or a new market and lost track of how the actual stock price was moving.

Whatever faults may be laid at the doorstep of technical analysis, losing track of actual prices is not one of them. Market technicians might be led astray by price, but we will never be accused of not paying attention.

There are a variety of price charts that technicians use: from point and figure charts to line charts to Kagi charts. But the basis for most market technicians is the bar chart. The bar chart consists of two axis: a horizontal axis representing time and a vertical axis representing price. Prices are plotted using small vertical lines, with each line representing a unit of trading time or a trading session. This trading session can be of any length whatsoever: a minute or five minutes, half an hour or a whole trading day, a week, a month, or a year.

This allows market technicians to analyze price action over a variety of durations—from the very long to the very short. It also makes it possible to analyze the same price action in multiple ways, such as looking at a daily chart and an hourly chart of the same ten-day period. Analysis of different time periods is a key strategy for most traders, but especially for momentum traders for whom low-cost entries and favorable risk/reward scenarios are paramount.

The length of the vertical line in the bar chart represents both the highest and the lowest price at which the given asset—stock, commodity, or

currency—traded during that session. Thus, at a glance, a trader reading a bar chart can see the range at which an asset traded over a given series of sessions (i.e., hours, days, weeks, etc.). In order to represent the opening and closing prices, bar charts use a very short horizontal line to mark the level in the range where the asset began trading for the session and the asset's final price for that session.

Compared to many other charting forms, such as line charts or the inexplicably ubiquitous mountain graphs of financial news programs, bar charts deliver a solid set of data to the market technician. Knowing where a market opened, how high it rallied, how low it fell, and where it closed, is primary market intelligence for the technician. However, there is a form of bar chart, the Japanese candlestick chart, which is to the bar chart what the bar chart is to the line chart. In fact, the amount of information traders are able to glean even from a cursory glance at a candlestick chart is such that many traders, including traders like Velez, insist that they "won't even look at a chart unless it is in candlestick form."

I will discuss Japanese candlestick charts more in the next chapters. For now, suffice to say that for the technical trader, the price chart is the field of battle. And for the momentum trader, the Japanese candlestick is both sword and shield.

What Are Technical Indicators and Oscillators?

Technical indicators are derivatives of price action. Whatever else you think of technical indicators, they are first and foremost products of the price action they measure.

This is both good and bad for technical indicators and for those who use them. What is good about technical indicators is that, insofar as they reflect price, they will be accurate more often than not. What is bad about technical indicators is that, insofar as they reflect price, they will always trail or lag price action. This means that while technical indicators tend to be right, they also tend to be late.

This does not mean that technical indicators are not useful. In fact, for one key step in trading momentum—the entry—I think technical indicators are supremely helpful. The signals from the best technical indicators provide what Jack Hutson called a "positively timed signal," a reveille or a starting gun to let traders know that the game is on.

What this does mean is that technical indicators, especially for short-term momentum traders, may not be the best way to exit a momentum trade. While trend traders often use the same, or similar, set-up to exit trades as enter them, momentum traders typically cannot afford to wait for a signal from an indicator to exit a trade. By the time the signal to exit arrives, a signal that is a derivative of price action itself, the market has often already moved against the trader. For a short-term momentum trader, this movement against them might be enough to turn a winning trade into a losing trade. To avoid this, I am going to suggest that technicians trading momentum consider using indicators to enter positions, but rely on price action itself to exit or take profits.

What Is the Difference Between Trend and Momentum Indicators?

Technical indicators are typically divided into trend indicators and momentum indicators. Trend indicators, such as the moving averages previously mentioned, tend to track price itself very closely, providing a running, cumulative price history that follows the actual price. For instance, a technician can use a trending indicator like a moving average to determine how current prices compare to their cumulative price history.

Rather than measuring price directly, momentum indicators tend to measure the ratio between buying and selling strength. What differentiates momentum indicators from each other in large part is the way they calculate this ratio and how they measure buying and selling strength.

Momentum indicators are usually referred to as oscillators, and their values move within a fixed range (such as from zero to 100) or around a fixed point (such as a zero line with positive and negative values above and below). Signals from momentum indicators are traditionally from crossovers midway through the range, from reaching certain extremely high or extremely low levels and by diverging from price action. A fourth way that oscillators provide signals is by taking a derivative—such as an exponential moving average or rate-of-change—of the oscillator and measuring and judging the relationship between the oscillator and the derivative.

A Brief History of Momentum Indicators

For market technicians, momentum refers to change in price over time. The two most common technical indicators used to measure momentum are the rate-of-change and momentum indicators. Essentially, these indicators measure the same thing; they just express it differently. Rate-of-change presents its momentum information in the form of a percentage, while the momentum indicator uses a ratio. Expressed as equations, rate-of-change looks like this:

$$ROC = P / Px$$

Where P represents the current session's price and Px represents the price "x" sessions ago. The momentum indicator, by contrast, looks like this:

$$M = P - Px$$

Where the price "x" sessions ago (Px) is subtracted from the current session's price.

These momentum indicators will provide traders with a single line that will rise as momentum increases and fall as momentum decreases. As you can tell from the formulas, as the difference between current prices and past prices grows, then the value of the momentum or rate-of-change (ROC) indicator grows as well.

Traders have improved on the concept of momentum and rate-of-change in a number of ways. The most basic upgrade has been to add a moving average and then to use crossovers between the momentum or rate-of-change indicator and the moving average of the indicator to generate buy and sell signals.

One criticism of these momentum indicators is that they "double count" the data. As Dr. Alexander Elder put it in his book, *Trading for a Living* (1993), "they react to each new price, and then jump again when that piece of data leaves the oscillator window." A solution to this double counting was provided by Fred Schutzman, whose "smoothed rate-of-change" indicator is constructed by calculating an exponential moving average and then applying the rate-of-change equation to the moving average, rather than to prices. Again, as was the case with the TRIX, we see the relationship between rate-of-change and exponential moving averages as key when developing and analyzing momentum indicators.

One of the most famous market technicians of all time, J. Welles Wilder, is responsible for one of the most popular momentum indicators: the Relative Strength Index (RSI). Wilder introduced this indicator in his book, *New Concepts in Technical Trading Systems*, in 1978. His goal, he wrote, was to provide "the analyst with upper and lower boundaries to determine overbought and oversold conditions." Wilder believed that the Relative Strength Index could anticipate tops and bottoms in markets and reveal chart patterns and support/resistance levels not apparent in the price chart, as well as present both divergences and what he called "failure swings" to indicate waning momentum and potential reversal.

RSI measures the balance between sessions that close up versus sessions that close down. The indicator does this by first calculating the average

number of points gained during bullish sessions (close up) and dividing that by what Wilder called the "average UP close" by the "average DOWN close." Dividing the average UP close by the average DOWN close produced a figure he called "relative strength." To get from relative strength to the RSI, Wilder added 1 (i.e., 1 + RS) and then divided that number into 100.

Take the quotient of 100 / (1 + RS) and subtract it from 100 to get the initial RSI figure. The basic formula for deriving the Index from RS is:

$$RSI = 100 - 100 / 1 + RS$$

Note that Wilder's phrases "average UP close" and "average DOWN close" refer to the average gain over "X" number of days, with that "X" typically equaling 14 days. So the average UP close, for example, means the average points gained from days that closed up over the past 14 days. Average DOWN close means the average number of points gained from days that closed down over the past 14 days.

Wilder's RSI was a handy tool indeed. In addition to giving traders a general sense of the bullishness or bearishness of a given market, the RSI, according to Wilder, was capable of indicating tops and bottoms in markets (i.e., overbought and oversold), creating actionable chart patterns such as flags and triangles, delineating support and resistance, and revealing important divergences between the indicator and price. As one of the first momentum indicators to offer so much in one place, it is little surprise that the RSI was, and continues to be, so popular with technical analysts and technical traders.

Wilder's view of overbought and oversold markets was relatively conventional—and is widely accepted by many, if not most, technical analysts today. Later, I will present a completely different way for market technicians to look at overbought and oversold markets. This method not only allows traders to exploit the surge in momentum that creates an overbought or

oversold market, but also can help traders stay in profitable trades longer than might otherwise be the case with most momentum tools.

If there is a king among momentum indicators, then there is little doubt that the Stochastic wears the crown. Popularized by George Lane, the Stochastic Oscillator (often referred to simply as "stochastics") might be the most widely used technical indicator outside of moving averages, Japanese candlesticks, and trend lines. And much of what Wilder said of his RSI can also be said of the stochastics.

Stochastics are an excellent tool for market technicians looking for swing opportunities in trends, breakout opportunities as markets move into truly bullish or bearish modes, and reversal opportunities in markets that have overstayed their welcome to the upside or downside.

Whereas momentum and rate-of-change indicators measure the change in price over time, and the RSI compares the bullishness of bullish days to the bearishness of bearish days, the stochastic refers to the range of the trading session. The stochastic seeks to reveal how close to the high bullish sessions are and how close to the low bearish sessions are. I like to think of the stochastic as measuring winning streaks and losing streaks. If we consider it a win when bulls are able to close the market near the highs and a loss when the bears are able to close the market near the lows, then the winning streak/losing streak analogy becomes clear—and an easy way to remember just what the stochastic is saying.

Both stochastics and the RSI remain exceptionally popular with technical traders. But both indicators—as well as momentum indicators in general—have been the subject of criticism from some. Perhaps the most incisive and constructive critique came from Tushar Chande and Stanley Kroll in their book, *The New Technical Trader.*

Chande and Kroll criticized the established crop of momentum indicators in a number of ways, including a failure to "measure momentum directly," the problem of fixed time periods, the problem of merely mimicking prices, and the problem of short-term price extremes.

I will address these criticisms later on, after the critiqued indicators get a hearing of their own. For now, suffice to say that (1) some of the "bugs" Chande and Kroll note are now considered "features" by some market technicians and (2) Chande and Kroll have provided a number of substitute indicators including one called "StochRSI" which, as the name implies, combines aspects of both the stochastic oscillator and the RSI to create what Chande and Kroll believe is a superior momentum indicator.

Test Questions

1. A market technician would be interested in:

   a. Accounting metrics
   b. Corporate balance sheets
   c. Income statements
   d. Price charts

2. Which of the following is not a momentum indicator?

   a. Moving average (MA)
   b. Rate-of-change (ROC)
   c. Relative Strength Index (RSI)
   d. Stochastics

3. According to Penn, the best way to read price action is:

   a. Bar charts
   b. Pie charts
   c. Japanese candlestick charting
   d. Line graph

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Chapter Two:
Markets and Momentum

What do we talk about when we talk about momentum?

What actually interests the momentum trader is not momentum per se, but changes in momentum. I call these changes momentum opportunities ("MO" for short) because they are key moments in time when a properly placed trade not only takes maximum advantage of momentum, but also often provides a comfortable risk/reward scenario.

Momentum traders betting on a change in momentum need to know exactly when their bet goes wrong. If it is a change in momentum that the trader is counting on, and that change in momentum does not occur, then the trader needs to get out of the way as quickly as possible—lest she be run over by the change that never happened.

At the same time, if a trader is in a trade and the momentum that he was counting on becomes seriously threatened, the momentum trader needs to book profits first and ask questions (or second-guess) later.

Conceptually, there are three different types of momentum opportunities that market technicians focus on: breakouts, swings, and reversals.

Breakout Trading

Breakout trading is probably the most familiar form of momentum trading. Breakout trading involves waiting for a market to gain sufficient momentum to power through an established resistance or support level. Breaks beyond resistance are called breakouts and lead prices higher. Breaks beyond support are called breakdowns and lead prices lower.

Support and resistance are important concepts for all traders, but they are critical concepts for momentum trading in general and especially for breakout trading. Think of support as an area in the price chart where downside momentum is weak and, resistance as an area in the price chart where upside momentum is weak.

Breakout trading can be as exciting as it can be profitable. Traders can use tools like the "Swing Rule" to determine profit points, or rely on a set percentage goal for each breakout trade they take. For example, Gary Smith, formerly of TheStreet.com, was one of the most impressive breakout traders I've come across. During his trading for the first few years of the 21st century, Smith relied on a 5% price target for his breakout trades.

For the momentum technician, any time prices are able to push beyond support or resistance, a breakout is taking place. Support or resistance may take the appearance of a consolidation range, a chart pattern like a triangle, or simply the evidence of failed rally attempts as reflected by the shadows of Japanese candlestick lines. Understanding breakouts in this way reveals that there are breakouts occurring all the time as markets move to new relative highs and lows. This means that there are constantly fresh opportunities for momentum technicians to ply their trade.

The downside of breakout trading, of course, is the false breakout. There is simply little that anyone can do when the side that appeared to have the upper hand is suddenly revealed to be weaker than previously thought. False breakouts are the bane of momentum and trend trader alike. Fortunately, momentum technicians are focused on evidence of

waning momentum above all else. This means a false breakout that might mean a missed opportunity, or worse, for a trend trader might simply mean an opportunity in the opposite direction for the shorter-term momentum trader.

Swing Trading

Swing trading rose to prominence in the late 1990s. In his *Swing Trading* presentation, Oliver Velez suggested that swing trading was a sweet spot between the more cumbersome, slow-moving institutional trading desks, and the frenetic, top-speed approach of day-traders ("What? Me hold a stock for longer than five seconds?" quipped Velez in light-hearted teasing of the stereotypical day trader). Combined with the dramatic increase in margin requirements for day traders in the wake of the dot.com bubble collapse, swing trading only became more popular in the early 2000s.

Swing trading can be defined as a short-term speculative strategy that involves buying dips and selling rallies in uptrends, and shorting bounces and covering lows in downtrends. For swing traders, the idea of buying low and selling high (or, in a bear market, buying high and selling low) is both a mantra and a mission. Velez instructs aspiring swing traders that it is their duty not just to buy "some" of the dips, not just to buy "most" of the dips, but to buy "every single dip." The only question, Velez concludes, is when.

I will talk more about this question of when over the course of the book. There are some downsides to swing trading. Perhaps the worst scenario for a swing trader is a sideways market in which the swings are too small to be exploited. If you consider the pattern of signal, confirmation, and entry, those three successive closes might represent all a market will move in a given direction before reversing and doing exactly the same thing in the other direction. To combat situations like this, one option is to change the time frame—from daily to hourly in stocks and futures, and from daily to four-hour in spot currency trading or forex—and

lower the expectations. Of course, another option is standing aside and either waiting for the market to make larger swings (or breakout) or change focus to a different market to trade.

Reversal Trading

Most people who think they know something about the markets probably envision reversal trading as the sin qua non of trading mastery. Come to think of it, many people who do know something about the markets tend to have a similar habit. Ride a market from 30 to 55, and you will most certainly win friends and influence people. But tell folks you were there buying stocks at the bottom of the Crash of 1987, and they might not even bother to ask how much you made. Who cares? You bought at The Bottom, dude.

Because of that, perhaps, reversal trading gets a bad rap from time to time. Since people tend to be too-impressed by those who catch tops and bottoms, there are often any number of traders, analysts, and trading newsletter writers all too eager to anticipate bottoms. As someone who has by now spent years learning and writing about Elliott wave theory, for example, it is painful to admit that some of the biggest trading blunders have come from people, including me, endlessly trying to call the top of a bull market.

To be fair, more than a few perma-bulls have ruined many a trading account by their repeated efforts to call bottoms in bear markets. But the fact of the matter is that while misery loves company, the trader who finds himself on the sidelines during a major advance in the markets has little affection for anyone.

For most market technicians, such top and bottom picking can only be made in the context of a sound and consistent trading methodology, and even more sound and consistent money management. Unique among all momentum trading, reversal trading (which looks for evidence of waning momentum in one direction with the goal of exploit-

ing a new surge in momentum in the other direction) has a very clear "WRONG!" point that, if heeded, will keep the reversal trader solvent and ready to trade again.

Unlike some trending indicators, which lose much of their value in certain market conditions, momentum indicators are effective in both sideways/consolidating markets as well as in directional/trending markets. Moreoever, as essentially short-term technical tools, momentum indicators can often fit into the small spaces that other indicators, like moving averages and trend lines, cannot. Even trend traders often use momentum tools as triggers to initiate positions they intend to hold for periods dramatically longer than those of the momentum trader.

Momentum may or may not be fleeting. But the changes in momentum that produce opportunities for traders are more fleeting still. As such, momentum trading has a sort of inherent short-term bias; though, as I've mentioned above, longer-term trend traders can use momentum techniques to get into positions that are then managed as trend trades. Also, some of the methods discussed here will enable longer momentum trades than are typical.

Using Momentum Indicators

Expectation is one of the important things to consider when using momentum indicators. Just because trend traders sometimes use momentum techniques, like breakouts, to initiate trades is no reason for a momentum trader to start turning every winning (or losing) momentum trade into a trend trade. Even some of the momentum techniques I will discuss later that can keep a trader in a position for several weeks do so only because they do not call upon the trader to exit the position until there is evidence of a significant change in momentum.

In situations where the momentum trading method does not provide its own exit, momentum traders need to be keenly focused on (1) other momentum tools that will let them know when a market may be losing

the very momentum that initiated the trade in the first place, or (2) on fairly strict price targets that allow the trader to exploit the momentum opportunity, exit (preferably with a profit), and move on to the next momentum trade.

This may be as good a place as any to point out that momentum indicators can be used to get traders out of trades just as well as they can be used to get traders into trades. There is a technique using one of my favorite momentum indicators that I will discuss later that is a perfect example of this.

There are two things that I demand for a momentum indicator, or really from any technical tool I might use. The first is a major move in a market should never happen without my technicals alerting me to it. If your technical tools cannot alert you to the sort of market bottoms we saw in the spring of 2009, then you need to get new technical tools.

The second thing I demand of an indicator is that it should neither bump me out of otherwise winning momentum trades nor try and jam me into every nondescript ripple in momentum's tide. There are few feelings in trading more frustrating than having a rising market sink just enough to trigger an exit, only to then have the market resume rising shortly thereafter. But one of those feelings might occur when dealing with a momentum indicator that seems to want you to be taking a position in every odd-numbered session and exiting a position in every even-numbered one. The momentum indicators discussed here have both the robustness to stay with momentum as long as momentum is strong and have enough of a filter to make it easier to take the quality trades while ignoring poorer quality ones.

Momentum, Methods, and Systems

Can I create my own momentum trading system with these momentum indicators? The answer, as you might expect, is a resounding "of course you can!"

First, let me make a distinction between trading systems and trading methods. Market Wizard *Linda Bradford Raschke* makes the point that most traders have a difficult time blindly following a system. By contrast, she says "many find it easier to be discretionary in a systematic way."

For traders who like getting their hands dirty, being a "systematic discretionary trader" is an ideal option.

Whether you opt for a 100% mechanized trading system or a method that allows you to be both systematic and discretionary, there are a few key questions and ideas that anyone building a successful trading approach must consider when trying to build a profitable trading game plan.

Most obviously, the first question is what market will you trade? Will you focus on a single market such as the e-mini S&P or the EUR/SD? Or will you look for momentum opportunities from among a virtual galaxy of stocks? Part of this question involves time frame. Will you look to day-trade momentum, or trade momentum over the course of a few days or a few weeks? Some markets that provide excellent momentum opportunities when viewed through the lens of one time frame suddenly become devoid of decent momentum trading setups when analyzed over a different time frame. This was certainly my experience, for example, in moving from intraday charts of spot currencies to daily charts—though your mileage may vary.

Once you know what you are going to trade and when you are going to trade it, the next questions focus directly on the trading experience. How will you know when to take a trade? Moreover, if you are looking to trade stocks in general, how will you select from among the numerous momentum opportunities that arise in these stocks almost every day? In other words, given a choice of 20 different momentum set-ups, what rules will you use to make sure that you are consistently choosing the set-ups with the greatest potential for profitability?

And when you determine that a trade opportunity does exist, how exactly will you enter it? Will you scale in, building up a position over time? Or will you jump in with all four feet?

How—and how soon—will your trading system or method let you know when you are wrong about a trade? And even when you are fortunate enough to have a winning position, how will you manage that position to achieve as much profit with as little risk as possible? Will you use trailing stops? Time stops? Will you look to establish a breakeven stop after the trade has moved in the anticipated direction? Will your stops be real, physical stops sitting on your broker's server, or will they be mental stops that you will have to both recognize and execute on your own? Will you add to winning positions?

Lastly, how will you know when it is time to exit a profitable trade? Will you use strict price targets? If so, what will those targets be based upon? Will you rely on nearby resistance and support as a clue to likely limitations of a given market move? And when that time comes, will you take all your chips off the table at the same time? Or will you scale out of the profitable position, piece by piece?

Apart from these very trade-specific considerations, there are also aspects of money management, such as position sizing, that can be incorporated into a trading system. While position sizing is beyond the scope of this book's discussion, know that the success of some trading methodologies has been credited as much to the method of position sizing used as to the actual trading system itself. So important is money management that it could be argued that even a mediocre or marginally profitable trading system can be improved with careful and strategic money management. At the same time, even the best trading systems and methods can leave traders broke if their money management strategy is flawed or nonexistent.

What are the measuring sticks of a successful momentum trading method? With most trading methods, traders end up choosing between two different types of trading success. Some traders will tolerate a win/loss rate that is 50/50, or even less, as long as the money made on the winners is substantially larger than the money lost on the losers. It could be argued that this is the classic trader's trade-off: You will be wrong as

often if not more often than you will be right. But when you are wrong, you will only be a little wrong. And when you are right, as the kids say, you will be right as rain.

Trend traders in particular often find themselves making this bargain. Because there are only so many trends to trade, trend traders often find themselves piling into markets only to have to scramble out soon afterward when the anticipated trend does not materialize. For those not prepared for this, it can be a bitter realization.

The fact of the matter is that human beings like to be right. And being wrong over and over again—even if those wrongs are merely paving stones on the road to being right—can be very, very difficult psychologically for many, if not most, to deal with. Combine that with the fact that being wrong means losing hard-earned money and you have yet another reason why there are far fewer profitable traders out there than there could be.

Momentum traders, on the other hand, tend to prefer a higher win/loss ratio and are willing to exchange big wins and little losses for more regular wins. It is not uncommon for momentum traders, especially in markets like spot foreign exchange to accept risk/reward ratios, for example, that are barely 1.25 to 1. Breakout trader Gary Smith looked for 5% gains and tolerated losses up to 6% on his trades during the early 2000s.

Broadly and generally speaking, the expectations of a given method of trading have to do with the time period during which the trade is expected to last. Trend traders know that they will have to endure often-painful drawdowns en route to what can be eye-popping gains. Momentum traders know that surges (and stalls) in momentum are temporary and that the opportunity to exploit them comes quickly and must be traded accordingly. While the trend trader is mostly concerned about having enough capital to withstand the worst movement against the trend, the momentum trader is mostly concerned about getting the lowest cost entry. Entries are important for both trend and momentum

traders, but given the relatively short period of time that most momentum trades are held, it is not too much to say that, for the momentum trader, the entry is everything.

All that said, my biggest mistakes in trading have tended to come not from entries, but from exits. Most of the entries I have tried in the past few years came courtesy of the momentum indicators that will be discussed in this book. My biggest problem was recognizing when to say when: the hows and whys of exiting positions.

I suspect that many traders do not consider themselves greedy people. Yet you really do not know your own greed until you find yourself taking a big loss because you were either too greedy or too ignorant to know when to take what might have been a modest gain. This is one of the reasons why I am such a big proponent of momentum analysis and Japanese candlesticks. There may be no more important step in the evolution of a successful momentum trader than understanding that the job is to enter when momentum is confirmed, and to exit when momentum is threatened. Waiting for momentum to be confirmed against you often means waiting too long.

Test Questions

1. Momentum opportunities include:

   a. Breakouts

   b. Swings

   c. Reversals

   d. All of the above

2. The most important indicator for momentum is:

   a. Volume

   b. Breakouts

   c. Trendlines

   d. Price Action

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Three:
Introduction to Japanese Candlesticks

It is absolutely true that the many of market technicians who rely on price charts use Japanese candlesticks in order to read price data. But I cannot help but wonder whether what was so novel ten years ago, when Japanese candlestick charting was making its major inroads onto the price charts of technical analysts, is now so commonplace that traders have forgotten the fundamental interpretive power of the Japanese candlestick line.

While I am not going to argue that the effective use of Japanese candlesticks makes technical indicators irrelevant, I will suggest that a true understanding and appreciation of Japanese candlesticks can turn the relationship most market technicians have between their technical indicators and Japanese candlesticks on its head. That is to say that while for many traders, the Japanese candlestick chart has become just another template, traders who re-educate themselves on candlestick lines can use those lines as a primary technical "indicator" and allow other technical tools to provide confirmation.

This is especially important for market technicians who want to trade momentum. The biggest rap against indicators in general is that they lag price action in trends. And the only time they don't lag price action is when they allege to lead it by way of divergences. But anyone who has

tried to trade divergences knows that it is not simple. Often a market will create numerous counter-trend divergences over the course of an advancing or retreating trend. Some of these divergences lead to sharp corrections or bounces, and some divergences lead only to sideways trading. But only one divergence leads to a bottom.

This is why my first secret about momentum indicators is this: the best indicator of momentum is price action. And the best way to read price action is by way of Japanese candlestick charting.

The notion that the best indicator of momentum is price action itself should not be controversial. Insofar as all indicators—trend or momentum—are derivatives of price, anyone looking to spot momentum opportunities should make price the focus of his or her investigation. And not just price, but a sense of who is winning the battle to determine price: those betting on higher prices or those betting on lower prices. After all, momentum in technical terms refers to the ability of one side, those betting on higher prices or those betting on lower prices, to carry session after session, utterly routing those on the other side of the wager. There is no better way of seeing which group is winning this battle (and which group has the momentum on any given day) than by using Japanese candlestick charts.

Japanese candlestick charting did not come from *Steve Nison*, author of the vital *Japanese Candlestick Charting Techniques*—though you would be forgiven for thinking so. No single person has done as much as Nison to bring the trading techniques of 19th century Japanese traders to Western price charts. As such, and given the widespread use of Japanese candlesticks, it could be argued that no other market technician has been as influential to contemporary chartists than Steve Nison and his work with Japanese candlesticks.

As Nison writes in his book, there are a number of reasons why Japanese candlesticks have caught on with Western traders since he published his first book on the topic in 1991. The candlesticks can be used on virtually every time frame or periodicity in which traders trade. The candlesticks

Figure 3.1 | S&P 500 Index, Daily | June 1998-August 1998

A historic evening star pattern in the S&P 500 Index in the summer of 1998 anticipated the correction that would be known as Russian Debt Crisis in August.

Chart courtesy of Prophet Financial Systems. Inc.

are "picturesque," making them both easy to remember and easy to interpret (see Figure 3.1). The candlesticks, though widely used, are not universally used, meaning there are still instances where candlestick traders will get signals before those using other techniques do.

But the fundamental reason why Japanese candlestick charting is so valuable was perhaps best summed up by Oliver Velez in his book *Tools and Tactics for the Master Day Trader*:

> *… It is our belief that the Japanese candlestick chart is by far the best and only form needed by the master trader. In fact, we regard the Japanese style of charting so superior that we would not look*

at a chart today if it were not in candlestick form. That is how vital to our success candlesticks have become.

We are immensely in love with candlesticks for only one simple reason: They make it easy to visually see which group, bulls or bears, is controlling the market. They also make it easy to see which group is about to lose or regain that control. That's it. They provide no additional facts. They do not have any capabilities that the others lack. Candlesticks simply allow the trader to visually determine, with greater ease, who's winning the battle.

This may be all that Japanese candlesticks do. But, as I hope to show over the next several pages, that is plenty.

How Do Candlesticks Work?

Japanese candlesticks work by making it easy for traders to see which group of market participants—the bulls who are betting that prices will rise and the bears who are betting that prices will fall—is winning at any given time. On an individual session basis, bulls "win" when the market closes higher than it opened. By contrast, bears "win" when the market closes lower than it opened. When bulls win session after session, the market has bullish momentum; and when bears win session after session, the market has bearish momentum. Both situations are ideal for trading.

There are times, however, when neither the bulls nor the bears win. At the most extreme, this happens when the closing price is virtually (or even exactly) the same as the closing price. Other times when there is no clear winner, a market might close a small amount above or below its opening price. But when that movement is slight, especially compared to the overall range, then often it must be concluded that neither bulls nor the bears won the session. In these instances, traders are confronted with a draw and must wait for further information, often in the form of the very next candlestick line, before determining who is winning.

Because of this, Japanese candlestick technicians put a great deal of emphasis on the distance between the open and the close. A session in which the bulls are able to drive prices above their opening price and close them near the highs of the session is much more bullish and suggests the potential for much more bullish momentum than a session in which the bulls are barely able to move prices from the opening price. Similarly, a session in which the bears are able to drive prices far below their opening price and close them near the lows of the session is much more bearish and suggests the potential for much more bearish momentum than a session in which the bears find themselves unable to move prices by much.

In a series of candlesticks moving upward or downward, if a technician notices that the range between the open and the closing price is decreasing and getting smaller, then it is a sign that while those who are in control of the market continue to be in control (i.e., bulls if the market is advancing, bears if the market is declining), their control is becoming weaker as the ranges grow smaller. In this scenario, each subsequent session shows the group in control as being less and less able to impose its will on the group that is not in control. In other words, even though the group in control is still in charge, its control—or its momentum—is growing weaker. Such patterns are often excellent advance warnings for traders to consider taking profits and to not overstay their welcome.

Japanese candlesticks resemble the bars of bar charts in some basic respects. Both candlesticks and bars consist of an opening price, a closing price, a high of the session, and a low. The bar chart shows this information using a single vertical line to represent the session range from high to low, and a pair of small horizontal lines perpendicular to the vertical line to represent where the opening price was in the range (on the left side of the vertical line) and where the closing price was in the range (on the right side of the vertical line).

By contrast, the candlestick uses a rectangular box called a "real body" to represent the opening and closing prices of a given session, and the

color or shading of the real body to represent the difference between bullish sessions and bearish sessions. Generally, white or green is used to color the real body of a bullish session, while black or red is used to color the real body of a bearish session.

We already can begin to see how effective this can be for traders. At a glance, a technician can see a white real body and know instantly that the session was bullish (Figure 3.2). Very bullish if the real body is large, less bullish if the real body is small, but bullish nonetheless. The technician also knows that the bottom of that white real body represents the opening price and the top of that white real body represents the closing price.

In order to represent the range of a given session, the highest price and the lowest price, Japanese candlestick charts use the candle "wick" or

Figure 3.2 | S&P 500 Index, Daily | February 2004-December 2004

The morning star pattern that developed in the weekly chart of the S&P 500 in the summer of 2004 heralded the end of the 2004 bear market.

Chart courtesy of Prophet Financial Systems. Inc.

shadow. Extending above and below the real body, the shadow of a Japanese candlestick lets traders see instantly where bullish and bearish momentum for the session grew weak (Figure 3.3). A shadow, for example, above a real body—bullish or bearish—means that buyers tried to push the market higher, but were repelled by sellers as the market closed. A shadow below a real body means that sellers were able to push prices lower intra-session, but buyers were able to gain the upper hand by the session's close.

The real bodies of candlesticks do not always have shadows. When there is no shadow above a candlestick's real body, the candlestick is said to have a shaved head. When there is no shadow below a candlestick's real body, the candlestick is said to have a shaved bottom. There are even times

Figure 3.3 | S&P 500 Index, Daily | January 2003-March 2003

The hammer pattern in the first half of March not only signaled the end of the two-year bear market, but also the beginning of a new, multi-year bull market.

Chart courtesy of Prophet Financial Systems. Inc.

when the real body is tiny—or virtually nonexistent—as when the opening and closing prices are the same, or virtually the same. This kind of candlestick, that appears to be all shadow and no real body, is called a doji.

Dojis, along with all the other types of candlestick patterns I will discuss, have a meaning in and of themselves as single candlestick lines. But those meanings can and do change when the various candlesticks find themselves in the context of other candlesticks all reflecting the changing reality of price action.

This is a point worth underscoring. As Steve Nison himself has noted, many market technicians abuse Japanese candlesticks by assuming, in essence, that a pattern in one context means the same thing when found in a completely different context. Although this (mal)practice continues to this day, including among some technicians trying to quantify candlesticks for use in automated trading systems, Nison warned against this tendency years ago. He wrote "candlestick patterns should always be viewed in the context as to what occurred before and in relation to other technical evidence."

Why do Japanese candlesticks work? In some ways, a defense of Japanese candlesticks and Japanese candlestick patterns is a defense of pattern recognition and, indeed, of technical analysis itself. I am always entertained by market technicians who approve of chart patterns, but disdain candlesticks—or vice versa. The more we recognize that everything we put on and read from a price chart is an abstraction, the better we are able to evaluate and discriminate between those abstractions that are more helpful and illuminating and those that, at the end of the day, only serve to complicate and obscure the underlying reality of buyers and sellers in the marketplace. This is as true for Japanese candlesticks as it as for chart patterns and for the moving average convergence-divergence histogram.

Candlesticks, indicators, oscillators, and patterns work because they simply mirror—in a variety of interesting ways—the human behavior on display in the buying and selling of stocks, commodities, and other

Figure 3.4 | Gold, Continuous Futures, Daily | March 2006-June 2006

After a near parabolic move to the upside in the spring of 2006, a dark cloud cover pattern in May helped warn gold traders that profit-taking time had arrived.

Chart courtesy of Prophet Financial Systems. Inc.

assets. Consider, for example, the psychology behind a basic Japanese candlestick pattern, dark cloud cover, which I will discuss at length in the next chapter. This description comes from Gregory Morris, author of *Candlepower* (1992):

> *The market is in an uptrend. A long white candlestick is followed by a gap higher on the open of the next day. Then the rally falters and the market closes at or near the lows of the day, ending below the midpoint of the prior day's white real body. Bullish participants in this market should be concerned with this type of price action. Those who are waiting to sell short now have the needed price in which to place a stop at the new high of the second day.*

A picture may or may not be worth a thousand words, but to a market technician, the picture of dark cloud cover is a preferable abstraction to the 90-odd words in the quote above (see Figure 3.4 as an example). Abstraction, shorthand, and patterns (in price as indicators) simply show us what would take an inefficiently large number of words to codify.

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One of the things that soon becomes clear after studying Japanese candlestick charts is just how elusive momentum can be. In fact, if you spend just a few hours a week looking at all of the stocks, indexes, commodities, or currencies in your watch list only using Japanese candlestick charts, then I would be willing to bet that you would gain a lot of sympathy for technical indicators. When you realize all the subtle shifts in momentum that take place, subtle shifts that become brilliantly apparent through the candlestick line, you can only wonder how any single indicator could show the same wealth of information that the candlestick does.

This, again, is why I want to emphasize candlesticks in a book about momentum indicators: your primary "momentum indicator" must always be price action itself, and there is no better way to interpret price action than through a Japanese candlestick chart. Other technical tools, including some of the better tools to be discussed later, can and should play an important part in confirming the signals provided by Japanese candlesticks. But focusing on the candlestick and what the candlestick reveals about surges and stalled momentum will keep a trader's eye on what counts: price.

Test Questions

1. Which of the following information is not revealed by a Japanese candlestick?

   a. Opening price
   b. Volume
   c. Session low
   d. Closing Price

2. When are Japanese candlesticks the most useful?

   a. When momentum is waning
   b. When momentum is picking up
   c. In a bear market
   d. In a bull market

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Four:
Japanese Candlestick Patterns

These Japanese candlestick patterns do not represent the only patterns you need to know; however, the momentum trader who can recognize these patterns and understand what they say about momentum (based on the context in which the patterns are found) will be a far more effective trader than he was before. The patterns discussed in this chapter include both the single- and multiple-line patterns that will appear on candlestick charts as part of breakout, swing, and reversal momentum opportunities.

At their most useful, Japanese candlestick patterns note instances when momentum is waning. Although, as we will see in a moment, there are patterns or single candlestick lines that in and of themselves represent powerful momentum to the upside or downside, the majority of key Japanese candlestick patterns tend to warn traders that the momentum in the current direction has become suspect.

It may seem backwards that one of the most important tools for analyzing and trading momentum is most effective when telling us that momentum is fading rather than increasing. But I would argue that there is no more crucial piece of market intelligence than an alert to a possible drop in momentum. This is because waning momentum is many times the prelude to a reversal. And unlike longer-term trend traders—for whom corrections, even sharp ones, are merely the cost of doing business—no momentum trader wants to be around when a reversal occurs.

Basic Single Line Candlesticks

Before discussing candlestick patterns—even single line patterns—we should go over the basic sort of candlestick lines that traders will see, especially when patterns are NOT being formed. The three most important "everyday" candlesticks are the long days, short days, and black and white marubozu, and they are as good a place as any to begin talking about candlesticks.

Long days are simply sessions in which the opening price and the closing price are significantly separate. As such, long days have long real bodies that very much resemble the candlestick that is their namesake. There is no specific measurement that signifies "significantly;" but, generally speaking, long days are long based on the other candlestick lines around them. Long days can close up (strong bullish momentum) or down (strong bearish momentum) and are among the most common candlestick lines that traders will see in price charts. Long days—and the marubozu—are the hallmark of the momentum trade. If your momentum trading system does not have you long during consecutive bullish long days or short (or sidelined) during consecutive bearish long days, then you need to get another momentum trading system (Figure 4.1).

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Short days are also very, very common candlestick lines and, like long days, can be either bullish (closing up) or bearish (closing down). In contrast to long days, short days feature relatively small real bodies, in addition to modest shadows above and below the real bodies. Also, in contrast to long days, short days signify much less momentum because the group that won the session (bulls by closing the market up, bears by closing the market down) was only able to do so by a relatively slight margin.

In other words, if a long day represents a convincing victory by one side of the market (the bulls or the bears), a short day represents a much closer contest, with one side eeking out the winning run in the late innings.

The lack of momentum displayed in short days' candlesticks is only heightened when appearing after a long day. One of things momentum

Figure 4.1 | Dow Jones Industrial Average Daily | May 2007-July 2007

Marubozu pattern mid-June represented climatic selling—and opportunities for reversal to the upside.

Chart courtesy of Prophet Financial Systems. Inc.

traders using candlesticks often look for is a series of candlesticks with ever shrinking real bodies. These shrinking real bodies represent momentum draining out of the market. A series of smaller long days followed by a short day or two is an example of what this kind of waning momentum can look like.

The last of these three basic candlestick lines I want to discuss before moving directly into single- and multiple-line candlestick patterns is called the marubozu. There are variations on the marubozu; for instance, black marubozu, white marubozu, closing marubozu, opening marubozu (as Gregory Morris points out in his book). But I want to focus on the basic marubozu candlestick insofar as it represents the most powerful momentum possible in a single candlestick line.

The marubozu looks identical to the long day except in one respect: the marubozu has no shadows above or below the real body. This is why I suggest that the marubozu is often a major momentum line in candlestick charting. In the white marubozu, for example, we are seeing a session that opens exactly at the lows and closes exactly at the highs. There was no relief for the bears whatsoever: no lower shadow to indicate an ability to push prices lower, and no higher shadow where bulls overextended themselves and were knocked down a few pegs by the bears. No, the marubozu is a rout.

At the same time, as Morris observes, the marubozu often represents too much of a good thing, as markets have an odd tendency to reverse themselves—even temporarily—in the wake of one of these overwhelmingly resounding victories for either those betting on higher prices or those betting on lower prices. It could be said that the marubozu, like a market move accomplished on climatic volume, monopolizes those determined to move the market more in one direction that all that is left are those trying to move it in the other direction.

Single Line Patterns

The previous three candlestick lines had one thing in common: real bodies that were longer than the shadows; however, some of the key, single-line candlestick patterns are special specifically because the size of their shadows is so prominent compared to the size of their real bodies. Long shadows, above or below real bodies, are indicative of weakness. Long shadows above a real body suggest bullish weakness going into the close of the session. And long shadows below a real body suggest bearish weakness going into the close of the session.

Shooting Star

But this weakness must be contextualized in order to have any practical meaning for the technical trader. The first single-line candlestick pattern I want to talk about, the shooting star, has the smallish real body of

a short day (hereafter referred to as "short line" to include periodicities other than a trading day). But above the real body is a long shadow that is often at least twice as long as the real body of the candlestick.

Importantly, this shooting star pattern must occur after an uptrend of some significance, or during a bounce in an overall downtrend. It is not enough for the pattern to appear solely as described in the previous paragraph. A shooting star is a creature of an overly bullish market (Figure 4.2). Traders should also be alert to instances when shooting stars appear as markets rally into resistance, which we define as a region where bullish momentum becomes weak.

Figure 4.2 | Sugar, Continuous Futures
Weekly | July 2000-September 2001

This shooting star pattern in October 2000 signaled the end of a swift advance in the commodity—and the beginning of a bear market that would cut sugar prices in half.

Chart courtesy of Prophet Financial Systems. Inc.

What the shooting star line tells the trader is that buyers managed to push prices higher intrasession, but they were overwhelmed by sellers who were able to push prices back down not only from the session highs, not only back to the open, but often—though not always—even below the open. As you might imagine, when this occurs after an uptrend, traders with long positions start to get nervous about the prospect for a larger reversal and begin exiting their long positions. This behavior often—though not always—leads to a top and the potential for reversal.

Shooting stars also appear at the top of bounces during downtrends (Figure 4.3).

I should note that Steve Nison, the authority on Japanese candlesticks, wrote of the shooting star as a two-line pattern. Because confirmation

Figure 4.3 | S&P 500 Index Daily | August 2002-September 2002

Shooting stars also appear at the top of bounces during downtrends. The six-day bounce here in early September ended as a shooting star pattern formed, paving the way for a resumption of the downtrend.

Chart courtesy of Prophet Financial Systems. Inc.

of a shooting star is more like confirmation of other single line patterns, I prefer to think of shooting stars as single line patterns—particularly when compared with clearly multiple line patterns like evening stars, bearish engulfing, and bearish harami.

Hanging Man

Another similar single-line pattern that often augurs a top is the hanging man (Figure 4.4). Found in the same environment as the shooting star—namely, an uptrend—the hanging man consists of a small real body and an exceptionally long lower shadow below it. Here, the intrasession market action is different from that of the shooting star, but the effect on traders who are long when the hanging man session begins is often the same.

Figure 4.4 | July Soybean Meal Daily | May 2007-June 2007

This hanging man pattern warned traders that momentum to the upside was waning. The correction came swiftly.

Chart courtesy of Prophet Financial Systems. Inc.

Traders betting on higher prices feel the power of the bears dragging prices lower intrasession and begin thinking about exiting. As the number of profit-takers increases, the market tops and begins to move lower, encouraging further selling. Although not necessarily as potent a psychological warning as the shooting star, the hanging man pattern is one that can be surprisingly bearish.

Hammer

The shooting star and hanging man appear at the top of rallies and signal the potential for a trend change. Hammer patterns, on the other hand, appear in declines and hint at the potential for a bottom. The hammer pattern is so called for two likely reasons. The first, and most obvious reason, is that the pattern resembles a hammer's handle and head. The second reason is because when it appears, it is said to "hammer in" a bottom in the market.

How does a hammer happen? In much the same way that the shooting star draws in buyers early, only to have them ambushed by sellers going into the close, a hammer candlestick line is formed when sellers overplay their hand in pushing a market down. This aggression on the part of sellers creates value and bargains in the minds of many looking to buy the market. When those betting on higher prices overwhelm those betting on lower prices intraday, the result is a hammer (Figure 4.5).

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Like other single line patterns, the hammer is confirmed by a close above its high. Hammers in downtrends can be major signs of waning momentum to the downside and are among the most powerful signals that a market has exhausted itself in one direction, and may be ready for the other side of the wager to begin moving the market in the opposite direction.

Doji

The fourth and last single line pattern I want to discuss is the doji, the appearance of which can be bullish or bearish, depending on where the doji appears in the chart.

Figure 4.5 | July Crude Oil Weekly | August 2006-April 2007

After a steep decline to end 2006, the market for crude oil developed a hammer candlestick line early in 2007, paving the way for higher crude oil prices over the first half of the year.

Chart courtesy of Prophet Financial Systems. Inc.

The doji represents indecision and reluctance to commit on the part of both those betting on higher prices and those betting on lower prices. In a doji, the opening and closing price are virtually, if not exactly, the same—indicating that neither side, neither the bulls nor the bears, was able to win control of the session. Dojis also often feature modest shadows above and below the price action. According to Nison in his book *Japanese Candlestick Charting Techniques*, in the correct context, dojis in general and doji stars, which gap away from price action, "are potent warning(s) that the prior trend is apt to change." This is so often the case that some aggressive momentum traders will fade a move when dojis appear, using the high or low of the doji as a stop-loss level.

Dojis appear individually, in groups, and as a part of other multi-line candlestick patterns such as evening and morning stars. There is also a variety of types of doji, which can be more or less bullish or bearish depending on where they appear in price action. There is, for example, the long-legged doji ("ricksaw man"), which is basically a doji with exceptionally long upper and lower shadows. There is also the gravestone doji, which resembles a shooting star candlestick, only with a flat real body (i.e., the open and close are the same). As dojis, both the long-legged and gravestone varieties also signal impending trend change when they appear on the price chart (Figure 4.6).

Multiple Line Patterns

There are six multiple line patterns that every momentum trader should know. Fortunately, by one way of thinking, you really only have to re-

Figure 4.6 | U.S. Dollar/Swiss Franc, Daily | May 2007

Doji patterns anticipate pullbacks on three separate occasions during this advance of USD/CHF in May.

Chart courtesy of Prophet Financial Systems. Inc.

member three basic patterns and invert them to create the pattern's bullish or bearish "alter ego."

Engulfing Pattern and Harami

Let me explain. Both the engulfing pattern and the harami are two-line patterns that signal the potential for reversal. By two-line, I mean that the pattern is not complete (let alone confirmed) until the potential engulfing and harami patterns meet two conditions. The first condition is a candlestick reflecting the trend, meaning a white candlestick in an uptrend or a black candlestick in a downtrend. The second condition is a following candlestick that has a real body that is larger than the real

Figure 4.7 | Nasdaq 100 Unit Trust (QQQQ)
Daily | May 2005-July 2005

A pair of bullish engulfing patterns in early July set the stage for a dramatic reversal in the QQQQ over the balance of the month.

Chart courtesy of Tradenavigator.com

body of the previous candlestick. In this way, the initial line is said to be "engulfed" by the second line.

Not only is the real body of the initial line engulfed by the real body of the second line, but also the color of the second line must be opposite that of the initial line. In the case of an uptrend, the initial line must be white and the second, engulfing line must be black (Figure 4.7). In the case of a downtrend, the initial line must be black and the second, engulfing line must be white (Figure 4.8).

Note that the emphasis is on the real bodies, not the entire candlestick from the top of the upper shadow to bottom of the lower shadow. All

Figure 4.8 | Soybean Meal, Continuous Futures Weekly | October 2006-April 2007

This bearish engulfing pattern—which also completed an evening star pattern—anticipates a spring correction in the market for soybean meal early in 2007.

Chart courtesy of Prophet Financial Systems. Inc.

that must be engulfed is the real body of the previous candlestick by the real body of the following candlestick.

The harami, in a sense, is more or less opposite in shape. Instead of a real body being engulfed by a larger real body, the harami pattern resembles a large real body followed by a candlestick line with a small real body, one that fits inside the range of the previous large real body. The word "harami" is, according to Nison, old Japanese for the word pregnant and, in a way, the harami pattern looks like an impregnated candlestick line with the second, smaller real body forming the belly.

As with the engulfing pattern, the harami anticipates reversal. The appearance of the smaller real body after the larger one shows a dramatic drop off in momentum, enough of a drop off to cause anxious traders to exit before the trend actually reverses, turning gains into losses. There

Figure 4.9 | U.S. Dollar/Japanese Yen Daily | May 2007-June 2007

A bearish harami in late May is followed by two doji. Another pair of doji develops just before the USDJPY explodes to the upside in the second half of June.

Chart courtesy of Prophet Financial Systems. Inc.

are bullish and bearish harami patterns that appear on price charts, with bullish harami appearing at the end of downtrends and consisting of a long black line followed by a short white line. Bearish harami appear at the end of uptrends and consist of a long white line followed by a short black candlestick (Figure 4.9).

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Engulfing and harami patterns are not the exact opposites of one another. Engulfing patterns, for example, tend to consist of long days with one simply longer than the other. Haramis, on the other hand, often consist of a long day and a much smaller second line such as a doji or a spinning top. The latter, the spinning top, is like a doji with a modest real body. As such, a spinning top can be an up or a down session. While similar to the doji in being able to alert market technicians to a potential change in trend, the spinning top is not considered to be as decisive as a doji.

Dark Cloud Cover and Piercing Pattern

Another pair of not-exactly-opposite-but-close-enough-to-compare candlesticks is the dark cloud cover and the piercing pattern. The dark cloud cover is a bearish reversal pattern that appears at the top of trends and the piercing pattern is a bullish reversal pattern that appears at the bottom of trends (Figure 4.10). Both patterns are two-line patterns; which means again that there is an initial candlestick that is countered by a second candlestick that, because of its shape and position vis-à-vis the initial candlestick, signals the opportunity for reversal.

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The initial candlestick in dark cloud cover is a white long day at the top of an uptrend. The second candlestick in the pattern is a black long day that opens above the high of the real body of the preceding white long day line and closes down at least 50% from the high of the real body. As such, the second black long day line is like a "dark cloud" that hangs over not just the previous white long day line but also over the rally that preceded it.

The piercing pattern looks almost exactly the same—only it's the inverse. Here, we have a downtrend and a black long day line followed by a

Figure 4.10 | Corn, Continuous Futures
Weekly | October 2006-June 2007

A dark cloud cover pattern begins the correction in corn futures during the spring of 2007.

Chart courtesy of Prophet Financial Systems. Inc.

white long day that opens below the low of the black long day line's real body and closes up at least 50% from that low. This is called a piercing pattern because the white, bullish long day line "pierces" into the black, bearish long day that came before it (Figure 4.11).

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Morning and Evening Stars

The last multiple line patterns I want to talk about are the morning and evening stars. These are actually three-line patterns, consisting of three candlesticks to complete the pattern. And as you might suspect, the morning star signals the opportunity for a bullish reversal to the upside, while the evening star anticipates the possibility of a bearish reversal to the downside.

Figure 4.11 | 10-Year Treasury Note Yield Index
Weekly | January 2007-June 2007

A piercing pattern in early March sets the stage for a strong rally in 10-year T-note yields over the first half of 2007. Note the bearish engulfing pattern that signals a pullback in the second half of April and the breakout that occurs in the second week of May to reassert the advance. A shooting star pattern slows things down in June.

Chart courtesy of Prophet Financial Systems. Inc.

The morning star is built in a downtrend (Figure 4.12). Prices are moving lower until a black long day candlestick is followed by a smaller short day candlestick. Often, this short day line gaps down on the open. These represent the first two of the three lines that make up the morning star pattern. The third line is a long day with coloring opposite that of the initial candlestick in the pattern. Thus if the initial candlestick in the pattern was black—as would be the case in a morning star—then the third and final candlestick in the pattern would be white. The second line in the pattern, the short day that represents the "star" in the pattern (because of the small size of its real body) can be either black or white.

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Figure 4.12 | July Cotton Weekly | December 2006-June 2007

The morning star pattern in July cotton resulted in an almost vertical rally in less than two months.

Chart courtesy of Prophet Financial Systems. Inc.

An evening star looks very much like a morning star, only in reverse (Figure 4.13). In the case of the evening star, prices are advancing when a white long day candlestick is followed by a smaller short day candlestick. The third line in the evening star pattern is a long day with coloring opposite that of the initial line in the pattern (in the case of an evening star, the initial line would be black and the third and final line would be white).

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Because morning and evening star patterns involve so many candlestick lines, there are a number of combinations that are possible at the same location. For example, a morning star might include within its three candlesticks: a hammer in the second position and a bullish en-

Figure 4.13 | May Soybean Meal Daily | January 2007-April 2007

The evening star pattern that developed in the soybean market in February 2007 helped cap an advance and anticipate a major decline.

Chart courtesy of Prophet Financial Systems. Inc.

gulfing in the third or a bullish harami in the first and second positions and a marubozo in the third. An evening star pattern might include a shooting star or hanging man and dark cloud cover. The fact that multiple Japanese chart patterns can be present in virtually the same space is actually a source of confirmation for candlestick traders, who take additional confidence from a consensus of bearish or bullish candlestick lines.

Trading with Candlesticks

There are a few things to be aware of when trading momentum using candlesticks. One of them is trend awareness. While a shooting star,

wherever it occurs, represents a lack of momentum to the upside, the market intelligence of that shooting star signal is contingent upon the environment where that shooting star appears. A shooting star after a long advance, or during a bounce in a significant downtrend, is likely to anticipate a more significant reversal than a shooting star that appears in a consolidation range, for example.

This is one of the reasons why a number of attempts to quantify Japanese candlestick patterns for use in computerized trading programs have been met with mixed results. Again, candlesticks do not provide any additional information than the bars in bar charts. The difference is largely a subjective one, but it is this subjective difference that traders working in a discretionary but systematic way can often exploit better than an automatic system that seeks to short every shooting star and buy every hammer pattern.

If you find a candlestick pattern irresistible to trade, even if the trend argues against it, then consider moving to a shorter time frame, such as the hourly for stock and futures, or a 4-hour periodicity for spot currencies that trade 24 hours. The patterns in that shorter time frame might be more effective in providing the sort of risk and reward information that would make a short-term, counter-trend trade worthwhile.

This brings me to an important point. It is imperative for traders to have a grasp of the amount they are risking in order to get a reward. In other words, how much pain are you willing to endure while waiting for a market to reach a price target? I am not a big fan of price targets because they can contribute to a sort of subconscious greed that keeps traders looking for more money than the market is willing to give. But price targets do play a role in helping traders set a reasonable risk/reward equation to help decide whether or not trades are worth taking.

Generally speaking, previous support and resistance levels work best as price targets. This is because unlike other methods that use arbitrary numbers, support and resistance levels exist because markets have cre-

ated them. Buyers, who tried and failed to push prices higher along with sellers who recognized prices as too expensive, create resistance. Sellers, who tried and failed to push prices lower along with buyers who recognized prices as too cheap, create support.

These levels are real points in the market place, and both exceeding and failing at these points represents a significant market event. As such, they represent excellent targets to the upside or downside, and good "uncle" points for technicians to use to let them know when the direction they anticipated was the incorrect choice.

That said, price targets are not contracts. A market moving higher is no more guaranteed to reach a recent high than it is to breakout in the first place. The price target is helpful to establish a risk/reward ratio, and to give the trader an idea of what the market can do. If the trader receives significant contrary intelligence in the form of divergences, or chart patterns, then that price target—especially for short-term, momentum trading—is best forgotten and profits duly taken. There will always be another opportunity, including getting back in on the trade just exited.

A last issue with Japanese candlestick patterns has to do with confirmation. When exactly is a specific candlestick pattern confirmed and able to be traded? There are a few different options. One line of thinking, an aggressive approach, suggests taking a position on the open immediately following a candlestick pattern. For example, this approach would have a trader buy the market intraday as soon as it opened following a hammer candlestick. Another line of thinking, somewhat more conservative, suggests waiting for prices to move beyond the high or low of a pattern before taking a position. Using the example of the hammer candlestick, this second approach would have a trader buy the intraday market as soon as it moved above the high of the hammer candlestick.

There is a third approach, which is even more conservative than the other two. The third approach suggests that traders wait until prices close beyond the high or low of the pattern before considering the pattern

confirmed (Figure 4.14). Within this camp there is some disagreement as to whether not closing beyond the entire pattern—shadows and all—is required, or if merely closing beyond the real body is sufficient. But this approach is certainly the most conservative way to trade Japanese candlestick patterns.

It also happens to be the approach I am most comfortable endorsing. I do think that traders can be more aggressive with single line patterns like shooting stars and hammers when encountered in the proper context. But for most candlestick patterns, the small amount lost in waiting for proper closing prices beyond the pattern is well worth it; it will help you to avoid constantly being whipped into positions that end up

Figure 4.14 | USD/SGD, Daily | May – July 2007
Trading with Candlesticks

A breakout above the highs of the second half of May provided traders with a momentum opportunity to the upside in early June. Five days after the breakout, a bearish engulfing pattern warns of waning momentum to the upside. That warning, confirmed on the following day provided a momentum opportunity to the short side, a trade that would have yielded modest gains until the tidal wave of selling at month's end.

Chart courtesy of Prophet Financial Systems. Inc.

as losers when the session ends. If it is our goal to make decisions based on who wins the fight—those betting on higher prices or those betting on lower prices—then it makes sense to wait for the final round before declaring a winner. The closing price represents that final round.

Test Questions

1. Which of the following is not a single line candlestick pattern?

   a. Doji

   b. Hanging Man

   c. Hammer

   d. Harami

2. When exactly is a specific candlestick pattern confirmed and able to be traded?

   a. On the open immediately following a candlestick pattern

   b. After prices have moved beyond the high or low of a pattern

   c. After prices close beyond the high or low of the pattern

   d. Any of these approaches are possible

3. Which Japanese candlestick pattern may represent a loss of upside momentum after a trend?

   a. Hammer

   b. Shooting Star

   c. Piercing Pattern

   d. Morning Star

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Five:
Price and Patterns

The 2B Test

In his 1991 book, *Trader Vic—Methods of a Wall Street Master*, Victor Sperandeo wrote of the 2B:

> *This one observation, considered alone, has the greatest potential for catching the exact highs or lows: it carries more weight in terms of probability than any single one of the other three criteria for a change of trend.*

This observation, one Sperandeo called his "personal favorite" in his book, *Methods of a Wall Street Master*, is the 2B Test. It is a remarkably straightforward approach to determining when a market has run out of momentum to the upside or downside. The 2B Test represents another opportunity for market technicians to focus on reading price action and momentum directly.

Combined with the intelligence provided by Japanese candlestick patterns and momentum indicators, the 2B Test might be unparalleled in its ability to let technicians know precisely when a market's momentum is exhausted. For those looking to trade reversals, there is no better intelligence than that.

I have also seen the 2B Test referred to as Turtle Soup. Larry Connors coined the phrase in his book, co-authored with Market Wizard Linda Bradford Raschke, *Street Smarts*. Connors' phrase colorfully captures the market behavior behind the reversal pattern, and while 2B is the shorthand I've become accustomed to, Connors' idea of "turtle soup" captures the scheudenfreude and buyers/sellers remorse that makes the pattern work.

A 2B or Turtle Soup pattern occurs when prices make a high, pull back, make a higher high, but then fail to follow-through to the upside. That is a "2B Test of Top." "A 2B Test of Bottom" occurs when prices make a low, bounce, make a lower low, but then fail to follow-through to the downside.

The market behavior behind this simple pattern is something that virtually every technician or trader has experienced, and usually from both sides of the wager. The 2B takes advantage of the false breakout or breakdown. When a false breakout takes place, buyers have overplayed their hand and are overwhelmed by sellers. Realizing they overplayed their hand, buyers often become sellers themselves, looking to exploit those who made the same mistake but have not yet acted.

The same thing happens to the downside, when sellers create bargains by pushing prices so low that an overabundance of buyers emerges. Short seller covering, as well as buyers chasing value, can create a great deal of upward or bullish momentum in a short period of time, to say nothing of signaling the end of a downtrend or bear market.

There have been a number of different confirmations that I have heard of when using the 2B. The approach used by Sperandeo says that a 2B is confirmed when prices move back below the initial high after failing to follow through to the upside (or move back above the initial low after failing to follow through to the downside). A more conservative approach would be to wait for prices to close below that initial high (or initial low).

Because trading momentum means understanding who is winning the fight between those betting on higher prices and those betting on lower prices, my preference is to wait for a confirming close.

One great example of a 2B bottom developed in the S&P 500 during the spring of 2007 (Figure 5.1). The S&P had been moving higher fitfully since the beginning of the year. A mid-February breakout above 1450 led not to further bullish days, but to confused, ambivalent price action as the market went skidding sideways for the balance of the month.

Then, on February 26, the bottom fell out as the market plunged 50 points in a single session, the largest single-point drop in several months.

The market traded lower into the next month, bounced for a few days, and then continued moving lower to test the lows set at the beginning of March. The S&P 500 exceeded those lows on an intraday basis. But buyers bid the market higher going into the close. Buyers showed up the

Figure 5.1 | S&P 500 Index, Daily | January 2007-March 2007

A lower low in the second half of March set up the opportunity for a 2B bottom and an end to the spring 2007 correction.

Chart courtesy of Prophet Financial Systems. Inc.

Figure 5.2 | S&P 500 Index Daily | March 2007-April 2007

Failure to follow-through to the downside and a confirming close above the high of the initial low in early March set up a powerful spring rally in the S&P 500.

Chart courtesy of Prophet Financial Systems. Inc.

following day as well, bidding the market still higher from the lows that, only briefly, exceeded those of the month.

The 2B test of bottom occurred when the market rallied back above the high of the initial low in early March. That happened on March 15th on a closing basis. The market traded lower for a day, then surged to the upside (Figure 5.2).

The momentum trade likely ended with the market trading below the hanging man late in the month. But in any event, the failure to follow-through to the downside was a signal that the S&P 500 was running out of momentum to the downside and vulnerable to a reversal.

Figure 5.3 | Dow Jones Industrial Average
Daily | May 2006-July 2006

Another set-up for a 2B bottom developed toward the end of the sharp correction that began in May.

Chart courtesy of Prophet Financial Systems. Inc.

Figure 5.3 is another classic example of a 2B bottom at work.

I wrote about this bottom in the Dow Jones Industrials for *Traders.com Advantage* back in the late summer of 2006. My article, "*A 2B Bottom Test in the Dow*," asked the question "is the long sought-after bottom in the DJIA finally at hand?"

The surge higher in mid-July confirmed the 2B bottom of a few days prior. In spite of the sharp pullback, the Dow moved on strongly over the balance of the summer and into the fall (Figure 5.4).

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2B tops can warn of waning momentum in an uptrend—important market intelligence for the momentum trader. Like 2B bottoms, 2B tops

Figure 5.4 | Dow Jones Industrial Average
Daily | June 2006-September 2006

Once again, a successful 2B bottom ends a bear market downturn and clears the stage for a significant rally.

Chart courtesy of Prophet Financial Systems. Inc.

do not necessarily mean that a market is going to reverse. These patterns simply reflect the market's lack of momentum in the current direction, with a vulnerability to reversal in the other direction. In the short-term, these opportunities are very often exploitable, whether or not the patterns lead to major reversals and enduring new trends.

Figure 5.5 is of a 2B top in a weekly chart. It is worth pointing out that this 2B top did not lead to a reversal in trend. The pattern developed in the Dow Industrials in the spring of 2005, just as the market was emerging from the 2004 bear market. No doubt that many feared that the rally into 2005 would fail as the Dow moved sharply lower, bringing a resumption of the bear market that had characterized stock behavior for months.

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Figure 5.5 | Dow Jones Industrial Average
Weekly | May 2004-April 2005

Failure to follow-through above the December 2004 highs led to a 2B top in late February/early March and a sharp correction over the balance of the spring.

Chart courtesy of Prophet Financial Systems. Inc.

The Dow did move sharply lower, but no new low was made vis-à-vis the lows of the 2004 bear market, and the Dow went on to make new highs.

But the sharp move downward in the spring of 2005, one that was telegraphed by the 2B top, remained an excellent opportunity to the downside—even in the midst of a market that was on its way much higher.

Wrote Victor Sperandeo of his 2B (1991):

> *I have never done a rigorous test to determine how often the 2B indicator accurately predicts changes of trend, and I don't need to. Even if it works just one in three times (and I'd lay money that it's more), I would still make money by trading on it, especially in the intermediate-term trend. The reason is that a 2B allows you*

> *to catch almost the exact top or bottom, and thus sets up a great risk-reward scenario.*

There is only one true caveat—and one that Sperandeo is clear on: fading momentum by selling potential tops and buying potential bottoms means being willing to admit defeat immediately. This sounds easy, but can be difficult in practice for many. When a 2B top goes on to make a new high or when a 2B bottom goes on to make a new low, it is the obligation of the technician trading momentum to respect that momentum and step aside. As Sperandeo wrote in his 1994 text, *Trader Vic II—Principles of Professional Speculation*:

> *The hardest thing in trading is to reverse your position after getting whipsawed. I recommend you double your position on the second 2B buy after a whip. Make it pay double!*

Channel Breakouts and Breakdowns

In some ways, trend channel breakouts are the sin qua non of momentum in markets. A trend is in place, prices are already moving at a certain clip, then momentum increases and the angle of ascent (or descent in the case of bear markets) grows steeper and steeper as price changes that formerly took weeks or days to happen are happening in days or hours.

Trend channel breakouts are another simple momentum indicator to which many technicians do not pay enough attention. There is a built-in bias against trend lines—especially angular trend lines—that many technicians have developed unnecessarily. Trend lines form the basis of trend channels.

The complaint is that everyone draws trend lines differently, so using them as a tool will always vary from technician to technician, or even from chart to chart if the technician is not consistent.

My solution? Draw trend lines the same way that I do—or, rather, the same way Victor Sperandeo suggests.

Draw your up trend lines from the lowest low to the highest low immediately preceding the highest high. Draw your down trend lines from the highest high to the lowest high immediately preceding the lowest low.

If you have to cut through prices, especially closes, in order to make your trend line work, then your trend line is probably too long. Move up from the lowest low to the next lowest low (or down from the highest high to the next highest high) and see if a proper trend line can be drawn. You don't have to be a fanatic about trend lines that cross through exceptionally long shadows. But keep the cheating to a minimum—a shorter accurate trend line is better than a longer trend line that does not reflect true support.

The trend channel is just the parallel extension of the trend line. Most charting software will allow you to create a parallel line based on a trend line, if not provide a channel tool outright that allows you to create the channel and the support or resistance trend line at the same time.

A trend channel breakout occurs when prices close above the upper resistance boundary of the channel. A trend channel breakdown occurs when prices close below the lower support boundary of the channel.

Occasionally prices will move back into the channel, sometimes in the form of a false breakout, other times simply as a counter-reaction or retest of the channel boundary, before continuing in the direction of the break. What is especially worthwhile about trend channel breakouts, however, is that because a trend is already in place, the likelihood of a breakout continuing to move prices forward (or downward in the case of a breakdown) is relatively high. In wagering on a trend channel breakout, you are simply betting on a short-term surge in momentum in a trend that is already in place.

Even though trend channel breakouts often result in new trends, it is the surge that momentum traders are interested in. As such, confirmation

Figure 5.6 | Oil Service HOLDRS (OIH)
Daily | January 2007-June 2007

Bullish trend channel breakout. An advancing market for oil service stocks developed a surge of momentum in the spring of 2007, powering the stocks—as represented by the OIH—out of their old trend channel and into a new, more aggressively bullish trend channel.

Chart courtesy of Prophet Financial Systems. Inc.

of a trend channel breakout occurs as soon as prices close beyond the trend channel boundary.

Price projections from trend channels tend to be based on the width of the trend channel. In other words, add the value of the width of the channel to the value at the breakout (or subtract in a downtrend) to get a price target for the breakout. Short-term momentum traders often do well to pay more attention to momentum than to price targets, which may or may not be reached.

Consider the bullish trend channel breakout in the chart of the Oil Service HOLDRS that developed over the first half of 2007 (Figure 5.6). The Oil Service HOLDRS (or OIH) bottomed in January and began a pattern of higher highs and higher lows going into the spring. The trend channel of that advance is clear.

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However, in late March, the angle of ascent in the OIH's rally became even steeper. The market broke out above the upper resistance boundary of the trend channel. While prices did dip back into the body of the trend channel, the market did not close below the close of the breakout day. The OIH climbed from the mid-140s to mid-170s in three months, evidence of a strong rally in oil stocks at the time.

Bullish trend channel breakouts are a part of virtually all strong bull markets, and often signal the moment at which convictions have deepened about market direction, emboldening those who were already in place and encouraging those on the sidelines to join in. This shift in momentum revealed by the trend channel breakout provides a great opportunity for traders in the short to intermediate term.

Bearish trend channel breakdowns can be quite volatile and dramatic. In the stock market, the breakdowns are often severe; rewarding the quick and the sure-handed who bet on the confirmation that comes when the market closes beyond the trend channel boundary.

A classic example of a bearish trend channel breakdown can be seen in the S&P 500 during the bear market of 2000-2002. The S&P 500 topped out in the spring of 2002 after the so-called "patriotic rally" in the wake of the September 11th Al Qaeda attacks in the United States. The market began moving down gradually over the balance of the spring. But it was not until the second half of May going into June that the bearish momentum became overwhelming (Figure 5.7).

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The S&P 500 broke down below its trend channel in mid-June and by early July, the S&P 500 was moving almost in a vertical line downward.

Figure 5.7 | S&P 500 Index Daily | March 2002-July 2002

A bear market in stocks in the spring of 2002 only became more intense as selling momentum increased dramatically in June. The selling was so intense that the secondary trend channel that developed after the first one was broken was also broken to the downside.

Chart courtesy of Prophet Financial Systems. Inc.

While many may have been lulled to sleep by the market's slow motion erosion of the spring of 2002, the trend channel break in the summer was a clear warning that momentum to the downside was increasing at a significant rate.

Trend channels are found everywhere from the charts of Elliott wave theorists to those using channels for stage analysis. I wrote about using channels for stage analysis for *Working-Money.com*, highlighting how a market was more likely to produce trading gains at a more rapid rate

Figure 5.8 | U.S. Dollar, Continuous Futures
Daily | July 2004-December 2004

A symmetrical triangle provides another opportunity for traders to exploit the bear market in the greenback during the fall of 2004.

Chart courtesy of Prophet Financial Systems. Inc.

after breaking out of an initial trend channel and into a new, steeper trend channel. As *John Murphy* wrote of trend channels (1996):

> *While the channel technique doesn't always work, it's usually a good idea to know where the channel lines are located. A move above a channel line is a sign of market strength, while a decline below a falling channel line is a sign of market weakness.*

I don't necessarily see buying trend channel breakouts or selling trend channel breakdowns as a trading method in and of itself. But such moves beyond the boundaries of the trend channel—particularly when accompanied by the confirmation of momentum indicators—can be as profitable as any other form of breakout, and often more so.

Triangles

There are a number of chart patterns that should be of particular interest to market technicians focusing on momentum. These patterns—triangles, pennants, and flags—often develop in the course of strongly trending markets and represent either a temporary lull in momentum in the direction of the trend or, in the case of pennants and flags, actual counter-trend price action in the short-term.

Trading momentum is about spotting instances where momentum dramatically increases, such as during a breakout or breakdown. But trading momentum is also is about spotting instances where momentum is waning—with the idea that when momentum returns to the market,

Figure 5.9 | AMEX Gold BUGS Index
Daily | October 2001-October 2003

An ascending triangle stretches from the spring of 2002 to the spring of 2003 before breaking out to the upside that summer.

Chart courtesy of Prophet Financial Systems. Inc.

prices will be propelled with enough force and enough speed to create worthwhile opportunities for swift and observant traders.

There are three different types of triangles that traders and speculators need to be aware of: symmetrical, ascending, and descending. Symmetrical triangles consist of short-term price action bound by a pair of converging trend lines (Figure 5.8). Ascending triangles consist of short-term price action, as well, but this price action is bound by a flat, horizontal resistance trend line and an upwardly sloping, support trend line. The "ascending" description of the triangle refers to the upward slope of higher lows, a bullish characteristic in itself, and to the tendency of prices to breakout from this pattern to the upside (Figure 5.9).

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Figure 5.10 | Dow DIAMONDS Trust (DIA)
Daily | May 2001-October 2001

This descending triangle helped traders anticipate the downturn that would eventually become the lows accompanying the September 11th terrorist attacks in the U.S.

Chart courtesy of Prophet Financial Systems. Inc.

Figure 5.11 | Copper, Continuous Futures
Daily | March 2006-January 2007

This symmetrical triangle grew over the second and third quarters of 2006, and formed the beginning of a long bear market in copper futures.

Chart courtesy of Prophet Financial Systems. Inc.

By contrast, the descending triangle (Figure 5.10) consists of short-term price action bound by a flat, horizontal support trend line, and a downwardly sloping, resistance trend line. The "descending" description of this triangle refers to the downward slope of lower highs, a bearish characteristic, and to the tendency of descending triangles to produce downside breakdowns.

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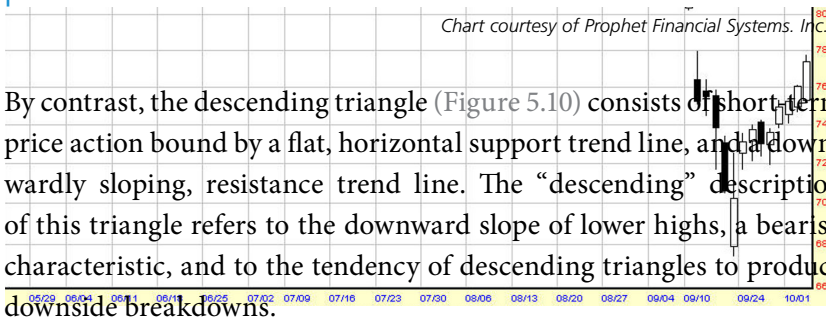

This descending triangle helped traders anticipate the downturn that would eventually become the lows accompanying the September 11th terrorist attacks in the U.S.

Chart courtesy of Prophet Financial Systems. Inc.

With symmetrical triangles, technicians need to measure the triangle from its highest point to its lowest point and then wait for the market to break free from one of the triangle boundaries. With a symmetrical triangle, the break could be to the upside or downside (Figure 5.11).

Figure 5.12 | Philadelphia Gold and Silver Index ($XAU) | October 2006-November 2006

The pullback in the advance of the Philadelphia Gold and Silver Index in mid-November took the form of a flag.

Chart courtesy of Prophet Financial Systems. Inc.

When prices break free from the pattern, traders should add or subtract the width of the triangle to or from the value at the breakout point. Thomas Bulkowski, who writes extensively about chart patterns in his book, *Encyclopedia of Chart Patterns*, says of symmetrical triangle breakouts "if a triangle breaks out and moves less than 5% or so, then returns and breaks out in the opposite direction, trade it in the new direction."

Ascending and descending triangles, by some contrast, have very clear support and resistance lines. This means traders can see where the breakout or breakdown level will be in advance and can get an earlier sense of what type of move might follow a successful break.

Take the width of the ascending or descending triangle at its widest point. In the case of an ascending triangle, add that amount to the value at the horizontal resistance level to get a minimum upside price target. In the case of a descending triangle, subtract that amount from the value at the horizontal support level to get a minimum downside projection.

Pennants and Flags

Pennants and flags are the true hallmarks of a strongly trending market. These patterns often appear in markets that are moving at such a powerful clip that they are not able to correct fully; instead, they move sideways, or sideways with a slightly counter-trend bias, before resuming their directional momentum.

Pennants and flags are similar in appearance, but not quite identical. Pennants represent short, counter-trend price action bound by a pair of short, converging trend lines. Flags, on the other hand, represent short, counter-trend price action bound by a pair of short, parallel trend lines (Figure 5.12). Although the differences in the trend lines are significant enough to call one pattern a pennant and the other a flag, for all intents and purposes, the differences end there (Figure 5.13).

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As such, the measurement rule for these patterns is the same. As befitting their placement in strong trends, pennants and flags tend to have ambitious measurement rules as well. Essentially, traders and speculators are encouraged to take the measure of the advance or decline from the end of the pattern back to the consolidation from which it came.

Take this value and add it to the value at the bottom of the pennant or flag pattern (conversely, take the value and subtract it from the value at the top of the pennant or flag pattern.) This will provide an upside (or downside) projection. Bulkowski, writing about pennants and flags, suggests that markets tend to fall short by a "slight" amount. As with all price projections, short-term momentum traders tend to be better off

Figure 5.13 | S&P 500 Index, Hourly | October 24 2003-October 29, 2003

An intraday pullback early in the market day set up a strong rally going into the session close.

Chart courtesy of Prophet Financial Systems, Inc.

letting waning momentum, as reflected in the candlestick lines, provide the signal as to when the market has given all the gains it is going to give for the time being.

Test Questions

1. Which of the following chart patterns is NOT typically used as a momentum indicator?

   a. Flag
   b. Head and shoulders top
   c. Triangle
   d. Pennant

2. A 2B Test of Top consists of:

   a. A high, a bounce, a low, and follow-through to the upside
   b. A low, a pull-back, a high, and follow-through to the downside
   c. A high, a pull-back, a higher high, and failure to follow-through to the upside
   d. A low, a bounce, a lower low, and failure to follow-through to the downside

3. The 2B Test is a tool for spotting and trading:

   a. Breakouts
   b. Breakdowns
   c. Reversals in momentum
   d. Trending markets

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Six:
Stochastics—Kings of Momentum

When it comes to momentum indicators, the stochastic oscillator is perhaps king of the hill. The stochastic indicator is one of the most popular technical indicators; yet, traders do not always use it in the best way. Here, we will take a close look at what the stochastic really measures, and then compare traditional methods for using the stochastic to spot momentum opportunities to the newer methods.

These newer methods not only use the stochastic more effectively than the traditional methods, but also do a better job of exploiting specifically what the stochastic is—and is not—saying about the market.

The standard definition of the stochastic oscillator is that it is a technical indicator that compares a market's closing price to that market's price range over a period of time. George Lane, who popularized the stochastic in an article for *Technical Analysis of Stocks & Commodities* called "*Lane's Stochastics*," wrote of his indicator (1983):

> *This method is based on the observation that as price decreases, the daily closes tend to accumulate ever closer to their extreme lows of the daily range. Conversely, as prices increase, the daily closes tend to accumulate ever closer to the extreme highs of the daily range.*

Think for just a moment about how Lane's observations about the stochastic might be displayed by a candlestick chart—and how well a Japanese candlestick chart on its own could reveal the same pattern of closes "accumulating" at the extreme end of a price range. Hopefully, you now see why I began this discussion of momentum indicators with a survey of candlesticks.

The stochastic is perhaps the most widely available technical indicator in both stand-alone and online/web-based charting services. Let's look first at the stochastics' component parts and its traditional uses. Then, let's explore what I think might be a better way for most traders, especially most momentum traders, to use the stochastic.

The stochastic oscillator consists of two lines called a %D line and a %K line. The %K line—also known as the "raw" stochastic—is derived by determining the ratio between the current session's close less the lowest point for a specific number of sessions on the one hand, and the highest point for a specific number of sessions less the lowest point for a specific number of sessions on the other. This ratio is multiplied by 100 to arrive at a value for %K.

The %D line—also known as the slow line—is actually a moving average of the %K line. When constructed this way, the stochastic is referred to as the "fast stochastic." However, there is a more widely used "slow stochastic" that takes the slower %D value from the fast stochastic, inserts it as the value %K, and then derives a new, even slower %D from that new %K. Observers like Alexander Elder in his book, *Trading for a Living*, point out that the advantage of the slow stochastic is that it creates fewer signals, meaning fewer "whipsaws" and less "market noise."

So the stochastic measures the frequency of closes near the high of the range, indicating bullish or upward momentum, compared to the frequency of closes near the lower of the range, indicating bearish or downward momentum. And as I alluded to earlier, this information is critical to momentum traders who need to know which side—those betting on

higher prices or those betting on lower prices—is carrying the day. As David Nassar said of the stochastic in his DVD, *Foundational Analysis:* "stochastics measure the shifting control of the emotional range (from fear to greed)." Keep this concept in mind as we look at a way of using stochastics to exploit the shift in psychology when greed and fear overwhelm a market.

Values for the stochastic vary much more widely than those for other momentum indicators such as the RSI. In *The Visual Investor: How to Spot Market Trends*, John Murphy recommends 14 and 3 as values for the slow stochastic. The software I use most commonly sets 10 and 10 as the default values. For the "hinge" or "hook" strategy I will discuss shortly, values of 7 and 16 (%K and %D, respectively) have been used effectively. And for one of the other stochastic strategies I will introduce later, the settings of 20 and 20 are my preference.

Additionally, George Lane set out eight different "formations" in which the stochastic might appear. Three of these formations—divergences, crossovers, and hinges—are among the most popular ways contemporary traders use stochastics. I will discuss each of these approaches and add a fourth technique I've nicknamed "BOSO" that is one that every trader using stochastics should consider.

Crossovers

Stochastic crossovers represent the most basic use of the stochastic, and, sometimes, the most problematic use. Here, the method involves buying crosses when the faster line (the %K line) moves above the slower line (the %D line), and selling crosses when the faster line moves below the slower line.

Stochastic crossover methods are similar to moving average crossover methods: follow the lead of the faster or shorter-term line in relation to the slower or longer-term line. This notion will come up again a little

Figure 6.1 | Dow Jones Industrial Average
Daily | August 2006-October 2006

Bullish stochastic crossovers helped traders time dips in this uptrend from the second half of 2006.

Chart courtesy of Prophet Financial Systems. Inc.

later when we look at another tool for spotting momentum opportunities: moving average trios.

However, since we are using a stochastic oscillator rather than a pair of moving averages, there are some additional caveats to be aware of that will improve the success rate of stochastic crossovers as a trading method. For example, rather than buying or selling crosses of the slow line by the fast line wherever they occur, some traders require that the cross take place in oversold territory (below 20) in order to be a buy signal, or in overbought territory (above 80) in order to be a sell signal.

There are other wrinkles that some traders use when trading stochastic crossovers. Nassar, for example, adds to the above overbought/oversold parameter a rule that both the %D and %K lines must also move out of the extreme zone before the signal becomes valid. In other words, both lines would enter oversold territory, where the %K line crosses over the %D line. As soon as both lines cross back up above 20, the buy signal would occur.

Here, we will look at the most basic stochastic crossovers. The fundamental value of the stochastic crossover can be seen in Figure 6.1, which is the chart of the Dow Industrials as it rallied up from the correction that began in the late spring of 2006 and ended late that summer. Beginning in late July, we can see that as the Dow marched from the 11,200 area toward 12,000, each dip corresponded to an instance of the faster %K line crossing below and then back above the slower %D line. Each time the %K line crossed above the %D line, it was a sign of growing momentum that technicians could exploit as soon as each signal was confirmed by a follow-through close in the direction of the trend.

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Stochastic crossovers are often used to follow trends, much in the same way that moving average crossovers and the moving average convergence-divergence (MACD) indicator are used. Sometimes, as a market is breaking down, the signals given by stochastic crossovers are more helpful in the short-term because, as those betting on higher prices and those betting on lower prices continue to fight, it creates opportunities for exploiting short-term surges in momentum. It is when these short-term opportunities end (i.e., when one side or the other has capitulated) that the stochastic crossover becomes a trend following tool.

There are problems with trading stochastic crossovers. Because the stochastic works differently in trending markets than it does in sideways, nontrending markets, traders who try to trade stochastic crossovers in a mechanical fashion will occasionally struggle to make gains.

Consider the example of the U.S. Dollar Index in the spring of 2006 (Figure 6.2). Although the market went on to provide a true breakdown in the second half of April, a trader mechanically trading stochastic crossovers would have been repeatedly whipped around throughout March and the first half of April. Although stochastic crossovers helped traders take advantage of the market's downturn in April, those same crossovers were helpless while the U.S. Dollar Index futures traded sideways earlier in the spring.

As such, other methods of using the stochastic—from divergences and the "hinge/hook" method to BOSO—are often preferable in both sideways and strongly trending markets.

Figure 6.2 | U.S. Dollar Index Daily | March 2006-April 2006

Stochastic crossovers in tight, congested or sideways markets often provide problematic signals until the market breaks to the upside or downside.

Chart courtesy of Prophet Financial Systems. Inc.

Divergences

A divergence in the stochastic occurs when the stochastic diverges from market price. For example, if a market makes a high and then a higher high, while the stochastic makes a high and then a lower high, the stochastic is said to be diverging from price. The same is true in the other direction. If a market makes a low and then a lower low, while the stochastic makes a low and then a higher low, then the stochastic is also diverging from price. The only difference is that the first example represents a bearish or negative divergence, while the second example represents a bullish or positive divergence.

The good news about divergences is that many, if not most, major tops and bottoms form telling divergences that can allow traders to go short at market peaks and long at market troughs. The bad news about divergences is that a trending market will often create multiple divergences before reaching a top or bottom. Traders can find themselves entering positions based on a divergence, only to be stopped out over and over as the market continues to make higher highs or lower lows.

There are a few ways to make trading divergences a little less of a high-wire act. The first is to make sure that the market you are analyzing has moved far enough from a consolidation, base, or extreme point (i.e., a peak or a trough) that a top or bottom of significance could develop. In other words, do not be too quick to call a top or bottom.

Second, be willing to use other technical tools—from candlestick patterns to other indicators—to determine the likelihood that a given divergence is truly marking an important top or bottom. If a negative divergence in the stochastic coincides with a 2B top, a bearish engulfing pattern, and a shooting star, then that divergence has a greater chance of being fruitful, all things considered, than a negative divergence that has none of these confirming indicators.

Last, be ready to exit. The one wonderful thing about trading divergences is that you know exactly when you are wrong: the market will move

on to make a new high or new low instead of reversing as the divergence suggested it would.

Many traders will recommend against trying to trade tops and bottoms—and for good reason. But because so much money can be made catching a reversal in a market, there will always be top- and bottom-pickers. And, in order to sell tops and buy bottoms, the technician has to be discriminating in the extreme. If the reversal does not happen, and the market moves to form yet another new high or new low, then the technician has no choice but to abandon the trade.

Figure 6.3 is an example of a negative or bearish stochastic divergence in the crude oil market when it topped in the summer of 2006. Crude

Figure 6.3 | September Crude Oil Daily | June 2006 – August 2006

A bearish stochastic divergence in early July anticipates a sharp correction, sideways trading, a weak bounce, and more trading to the downside.

Chart courtesy of Prophet Financial Systems. Inc.

Figure 6.4 | Nasdaq Composite Index
Daily | July 2004-September 2004

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This bullish stochastic divergence in August signaled the end of the 2004 bear market in the Nasdaq.

Chart courtesy of Prophet Financial Systems. Inc.

Figure 6.4 | Nasdaq Composite Index
Daily | July 2004-September 2004

This bullish stochastic divergence in August signaled the end of the 2004 bear market in the Nasdaq.

Chart courtesy of Prophet Financial Systems. Inc.

reduction in the velocity of movement in either 'K' or 'D' indicating a reverse of trend the next day."

The hinge—or hook—looks as it sounds. It is a small crook or bend in either stochastic line. For Lane, the purpose of the hinge was to warn traders of a very short-term reversal as shown in the change of slope of the %K or %D lines. This bend does not necessarily cause the stochastic values to drop—an advancing stochastic can have a hinge and still be considered advancing, though at a less rapid pace.

By contrast, Lane's warning is described this way:

> *When the 'K' line has been declining each day and then one day reverses sharply (from 2% - 12%), this is a warning that you have only one or two more days of downward movement before a reversal.*

Lane illustrates the warning by comparing to a hinge and what he calls an "exaggerated hinge." The difference is that the warning involves only the %K line and the bend or hook that line makes is much more dramatic and counter-trend than the bend of the hinge or even the exaggerated hinge. Whereas the hinge warns traders that the market is slowing (i.e., a one-day reversal due to waning momentum), the warning is an alert that a counter-trend market movement of more significance is coming.

The most interesting use of Lane's hinges and warnings might be the ANTI, a trading set-up described by Linda Bradford Raschke in her book with Larry Connors called *Street Smarts*. Bradford Raschke's ANTI is somewhat different and involves additional variables. But the use of the hooks and bends of an oscillator to trigger entries in certain market conditions is very much the same notion in Raschke's ANTI as it is here with the stochastic.

Notice the market for the QQQQ, the exchange-traded tracking fund for the Nasdaq 100 Index, during the bull market in the second half of 2006 (Figure 6.5). In an uptrending market, the momentum play using stochastic hinges or hooks means simply waiting for the stochastic to turn down and then up again. That hooking up provides the signal.

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The signal is confirmed as all signals are confirmed in momentum analysis: by a follow-through close. In the same way that failure to follow-through was seen as evidence of waning momentum in patterns like the 2B, when follow-through does occur on a closing basis, it provides confirmation that the signal provided by the momentum indicator or technique is likely to be valid.

Figure 6.5 | Nasdaq Unit Trust (QQQQ)
Daily | September 2006 – November 2006

Bullish stochastic hooks provide entry signals for short-term trading in the course of this uptrend in the fall of 2006.

Chart courtesy of Prophet Financial Systems. Inc.

In the case of the QQQQ in the second half of 2006, we can see how various hooking up patterns in the fast line of the stochastic often accompanied days when the market closed up. And in the days subsequent to those hooking up days, the market tended to remain in an advancing mode. Even when confirmation arrived a few days after a signal, or when the market for the QQQQ waned a bit, the market in most cases did not breakdown before providing at least enough upside for a momentum-based technician to profit.

Bearish stochastic hooks work the same way in downtrends.

Consider Figure 6.6, the chart of the US Dollar/Swiss Franc currency pair in the first half of 2007. Once the market broke down in February—

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Figure 6.6 | U.S. Dollar/Swiss Franc, Daily | February 2007-April 2007

Even in a volatile downtrend, bearish stochastic hooks can help traders time optimal entries when momentum to the downside has shown evidence of reviving.

Chart courtesy of eSignal

the breakdown itself being a clue that momentum was increasing and directional—stochastic hooks signaled excellent opportunities to exploit temporary bounces and rallies during the decline. Late February, early March, and late April all provided instances where the hooking down of the stochastic alerted traders to waning momentum to the upside—the warning George Lane wrote about. In the context of a downtrend, this warning provided sound signals that, upon confirmation, made for winning short-term momentum trades.

BOSO: A Better Way?

Back in 2005, I wrote an article called "*BOSO*" for *Working-Money.com*. That article was based in part on observations made by Price Headley of BigTrends.com during a seminar at the Trader's Expo earlier that year.

Headley's idea—and one I discussed in "BOSO"—is that markets that become overbought or oversold often stay overbought or oversold for a period of time long enough for traders to be able to make money.

In other words, the BOSO approach (shorthand for "buying the overbought and selling the oversold") takes advantage of bullish and bearish momentum by waiting until the moment that momentum reaches a certain threshold, specifically, the overbought or oversold threshold. The strategy is then to ride the market's momentum until it is no longer able to remain beyond the momentum threshold. We could call the overbought threshold the "Greed Zone" and the oversold threshold the "Fear Zone."

Jacob Bernstein, who also championed using the stochastic in this unorthodox but often highly effective way, has referred to this method as a "stochastic pop." Nevertheless, the BOSO or stochastic pop remains a minority approach to the stochastic—another reason for traders to consider adopting this profitable but underexploited source of trading signals.

Watching a BOSO unfold can be a true thing of beauty, especially for those accustomed to thinking that overbought equals sell and oversold equals buy. The BOSO methodology takes complete advantage of the notion that markets can move higher or lower than anyone expects. And while doubters stare at such a market, waiting, wondering, and then pleading for it to reverse, those technicians who understand just what it means when the stochastic breaks into what I called the "Greed Zone" or the "Fear Zone" are often making out like bandits.

An excellent example of a bullish BOSO breakout into the Greed Zone came as the S&P 500 was making a year-end rally in 2005 (Figure 6.7). < view chart > hide chart A fairly typical late year correction brought the S&P 500 low in October. But by the end of the month, the S&P 500 appeared to have bottomed and began moving upward. On November 3rd, three days after the S&P 500 broke out above the short-term consolidation range that developed at the

Figure 6.7 | S&P 500 Index
Daily | October 2005-December 2005

The BOSO stochastic signaled a surge in momentum in early November as the stochastic became—and remained—overbought for the balance of the month as the S&P 500 sailed higher.

Chart courtesy of Prophet Financial Systems. Inc.

October lows, the stochastic penetrated the overbought zone.

Confirmation in the form of a follow-through close above the high of the day did not arrive for five days. But when confirmation did come, it set the stage for a rally in the S&P 500 during which the market tacked on 40-odd points in less than three weeks to close out the month of November.

BOSOs to the downside, in which markets become oversold and remain oversold, are no less worthy than their bullish counterparts. The bearish example takes a look at the U.S. Dollar/Singapore Dollar currency pair in the fall of 2006 (Figure 6.8).

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Figure 6.8 | U.S. Dollar/Singapore Dollar
Daily | October 2006 – December 2006

The market for the USD/SGD pair broke down in mid-October and became oversold in the BOSO stochastic shortly thereafter. That plunge lower in October represented a great opportunity to the downside as the stochastic remained oversold throughout November and December.

Chart courtesy of eSignal

The market for buying U.S. Dollars and selling Singapore Dollars (USD/SGD) was in a downtrend earlier in 2006, but the market bounced in late spring and began moving fitfully sideways into late September. Although there was a downside bias, USD/SGD managed to avoid a full-fledged breakdown for months.

However, when prices broke down in mid-October, there were few buyers who stepped in. This allowed the selling to intensify to the point that the market for USD/SGD became oversold.

Conventional wisdom would encourage technicians to begin looking for bottoms. However, the BOSO methodology tells us that if the market becomes oversold and shows follow-through to the downside, then

the proper play is to continue (or begin) betting against the market, not trying to fade the market by buying.

Clearly the BOSO approach worked wonderfully for USD/SGD traders in the fall of 2006. The USD/SGD became overbought on the 19th of October, and that move lower was confirmed on a follow-through closing basis on October 25th. The next two days alone saw the USD/SGD pair fall 135 pips.

What is especially compelling about the BOSO method is that it helps technicians climb into markets that they may otherwise avoid (or worse, fade). The BOSO method also helps technicians ride momentum longer than they would with most momentum trading techniques. For as long as the market remains beyond the Greed or Fear threshold, technicians can feel relatively sure that the market will continue to move in their favor. It is only after a market slips from the Greed or Fear threshold—and shows follow-through out of those zones on a closing basis in subsequent sessions—that the trader must abandon the trade.

For many momentum traders, waiting for the market to fall out of the overbought zone or bounce up from the oversold zone risks too much of the gains, particularly on a short-term basis. This is why I appreciate and use momentum indicators like the stochastic and, as I will show later, the MACD histogram and TRIX. These indicators may spot entry levels in markets, but I prefer the immediate market intelligence provided by Japanese candlesticks to tell me when it is time to take my leave and close out the trade.

Test Questions

1. Which stochastic formation takes advantage of momentum by waiting until the moment that momentum reaches the overbought or oversold threshold?

   a. Crossovers

   b. BOSO

   c. Divergences

   d. Hinges

2. Which of the following momentum indicators is NOT based on moving averages?

   a. MACDH

   b. TRIX

   c. Moving Average Trios

   d. Stochastics

3. Hooks are rare but effective trading tactics for all of the below momentum indicators except which one?

   a. Japanese candlesticks

   b. Stochastics

   c. TRIX

   d. RSI

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Seven:
RSI—Momentum's Problem Child

Writing about his Relative Strength Index (RSI) in *New Concepts in Technical Trading Systems,* Welles Wilder noted five different "interpretative factors" or capacities that the RSI would bring to price charts: tops and bottoms, chart formations within the indicator itself, support and resistance, divergences, and a phenomenon he called "failure swings."

In the years since Wilder first introduced his technical tool, some of these capabilities are more commonly used by traders than others. The RSI is still a popular tool for spotting divergences and for warning traders of overbought and oversold conditions. The RSI has become less widely used for its ability to create chart patterns, and traders have since learned that overbought and oversold conditions do not in and of themselves indicate market tops and bottoms.

Overall, however, the RSI remains widely available in charting software programs and is as often a feature in the price charts of technical traders as any other oscillator, including stochastics and the moving-average convergence divergence indicator (MACD). In addition to discussing exactly what the RSI measures, we will spend time looking at the different ways that Wilder intended his indicator to be used.

We will also use this chapter as an occasion to examine the critique of momentum indicators, like the RSI, made by Tushar Chande in his

book, *The New Technical Trader*. We will highlight his indicator, StochRSI or stochastic RSI, which Chande has suggested improves on the failings of traditional momentum indicators.

What exactly does the Relative Strength Index measure? One way of thinking about the RSI is that it compares the bullishness of bullish sessions to the bearishness of bearish sessions, using points gained or lost as the gauge of "how bullish is bullish/how bearish is bearish." This differs from the way the stochastic measures bullishness or bearishness, but in both instances the technical indicators are looking forward to determine which of the two forces, those betting on higher prices or those betting on lower prices, is in control of the market.

The RSI is calculated by first determining a figure called relative strength, or simply RS. RS is the ratio between the "average of X days up closes in points" and the "average of X days down closes in points." The X refers to the number of sessions with points to be averaged; generally, traders use 9 or 14 sessions, with 14 perhaps being the most common default.

So calculating RS would mean, for example, taking all the "up days" over the past 14 days, and averaging the number of points gained. Then take all the "down days" over the past 14 days and average the number of points lost. That figure is relative strength.

To get the Relative Strength Index, RS is then put in the following equation:

$$RSI = 100 - 100 / 1 + RS$$

This provides for a figure between 0 and 100, and a number that will move higher or lower based on the dominance of buyers or sellers in the marketplace as calculated by RSI.

But it is not the 0 and 100 levels that concern traders using RSI. Rather two other levels—at 70 and 30—mark the thresholds between what is considered "normal" or unremarkable market behavior with relative

balance between buyers and sellers, and what is considered "extreme" in which one side of the market is in complete, if not overwhelming, control. It is the latter situation that is often referred to as either overbought (when buyers have maximum control) or oversold (when sellers have maximum control) conditions.

As John Murphy writes in *The Visual Investor*, the ability to determine overbought and oversold levels in the market is the "main value of this oscillator." That said, he encourages traders to tweak and adjust the RSI depending on market conditions, tightening the RSI when volatility is low and loosening the RSI when volatility is high. Tightening the RSI means shortening the duration to something shorter than 14 at the very least, and maybe even shorter than 9. Loosening the RSI means lengthening the duration beyond 14 periods.

Murphy makes another point that is worth noting, particularly in light of what we've learned from the BOSO discussion with regard to the stochastic:

> *The crossings of the 70 and 30 lines should always be watched closely. During a strong uptrend, it's not unusual for an RSI oscillator line to rise above 70 and stay there. That is usually the sign of a strong uptrend. Prices may stay above the 70 line for weeks. In such instances, it's probably best to ignore the oscillator for the time being, as long as it stays above 70.*

Compared to the stochastic, I have found chasing the RSI into overbought or oversold territory much more difficult. On standard, default settings, markets have tended to remain longer in extreme conditions as measured by the stochastic compared to the RSI. This may mean that overbought and oversold conditions in the RSI come closer to marking true instances of buyer and seller excess. As such, the RSI would be a better indicator for tracking tops and bottoms based on overbought and oversold readings.

I have never been a frequent user of the RSI. For me, there were always other oscillators—such as the stochastic and the MACD histogram—that were preferable to use when scanning markets for divergences, which is perhaps the best of the "most common" ways that traders use oscillators like the RSI. That said, many, many market technicians do use and appreciate the RSI. What I want to do here is both outline the best of the most common ways to use RSI and re-introduce some of the original ways that J. Welles Wilder Jr. encouraged traders to use and trade his index.

Among the ways of using the RSI that have gone somewhat out of favor is the strategy of using the overbought and oversold levels to indicate tops and bottoms, respectively, in markets. Wilder wrote in his book (1978) that "the Index will usually top out or bottom out before the actual market top or bottom, giving an indication that a reversal or at least a significant reaction is imminent."

Unfortunately, as we saw in the chapter on the stochastic, markets that become overbought or oversold often remain overbought or oversold for a significant period of time. Much of the "easy money" in a trade is made when a market is overbought and making new high after new high, to the often-annoyed astonishment of those who are not onboard. So to abandon a market because it is overbought or oversold, or to automatically connect those conditions with potential tops or bottoms, can relegate a trader to missing out on some incredible market moves.

Because the RSI has the tendency to mimic price action (in fact, it is when oscillators like the RSI stop mimicking price action that technicians become concerned), some RSI traders have used patterns in the oscillator as advance warnings of potential changes in the underlying market. For example, a trader may notice a support or resistance level in the RSI, and then look at the price chart to see if that support or resistance in the indicator is reflected in the market. Sometimes, wrote Wilder, "areas of support and resistance often show up clearly on the Index before becoming apparent on the bar chart." Noting instances

where an RSI meets resistance can help a trader play closer attention to what is happening—or may soon be happening with price. The same is true with patterns such as flags and triangles.

Two of Wilder's techniques for using the RSI, however, deserve special emphasis: the divergence and the failure swing. I have already discussed the nature of divergences in the previous section on stochastics, so I will move more quickly to examples of positive and negative divergences in the RSI. I will also re-introduce Wilder's notion of the failure swing, a type of pattern that can appear in the RSI and one that often dove-tails with the signals provided by positive and negative divergences.

Divergences

Suffice to say that divergences in the RSI work virtually the same way that divergences in the stochastic, the MACDH, or other momentum oscillators do: when prices make a higher high when the indicator makes a lower high, a negative or bearish divergence is created. When prices make a lower low when the indicator makes a higher low, a positive or bullish divergence is created.

One thing is worth repeating, however. A divergence signals a waning of momentum. It does not necessarily signify new momentum in the opposite direction. Divergences appear frequently in uptrends and downtrends in response to the tug-of-war between those trying to drive momentum further faster and those betting against it. Again, there are many divergences in a trending market, but only one of them will end up signaling the end of the trend.

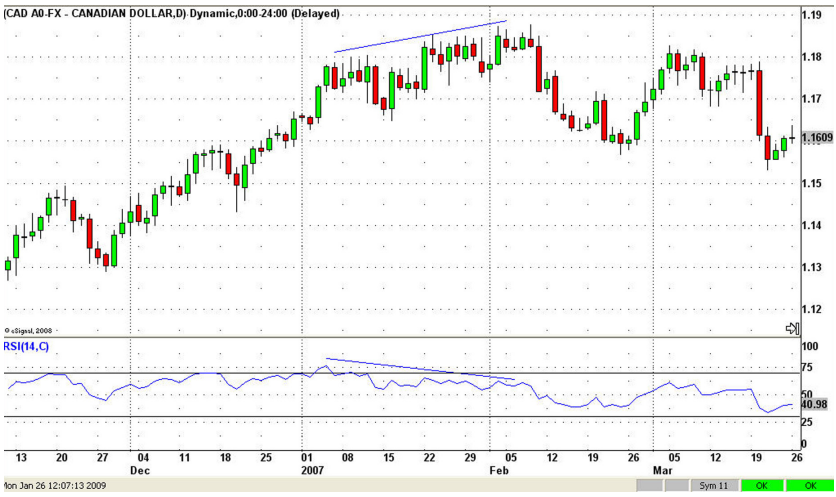
As such, divergences are best thought of first and foremost as warnings to exit, and second as opportunities for a reversal. I do not want to minimize the capacity of divergences to spot reversals—next to Japanese candlestick and 2B patterns, there may be no better tool than divergences in this regard. But first things first. There will be plenty of

opportunities to exploit momentum in a new direction if and when the warning of a divergence turns into an outright reversal.

Consider this example of a negative divergence in the U.S. Dollar/Canadian Dollar currency pair in February 2007 (Figure 7.1). This negative divergence would lead to a stunning collapse in the value of the American greenback versus the Canadian "loonie," as forex traders call it. The market for USD/CAD had been wedging higher throughout January after a strong run higher in 2006.

Although the USD/CAD did not make clear, towering peaks in January, it was clear that the market was making higher highs and higher lows. What was equally clear, however, was that the RSI was making lower highs and lower lows at the same time. This negative divergence pattern lasted throughout the month of January until finally, on February 9th, the sellers overwhelmed the buyers and USD/CAD broke down.

Figure 7.1 | U.S. Dollar/Swiss Franc | Daily | May 2007



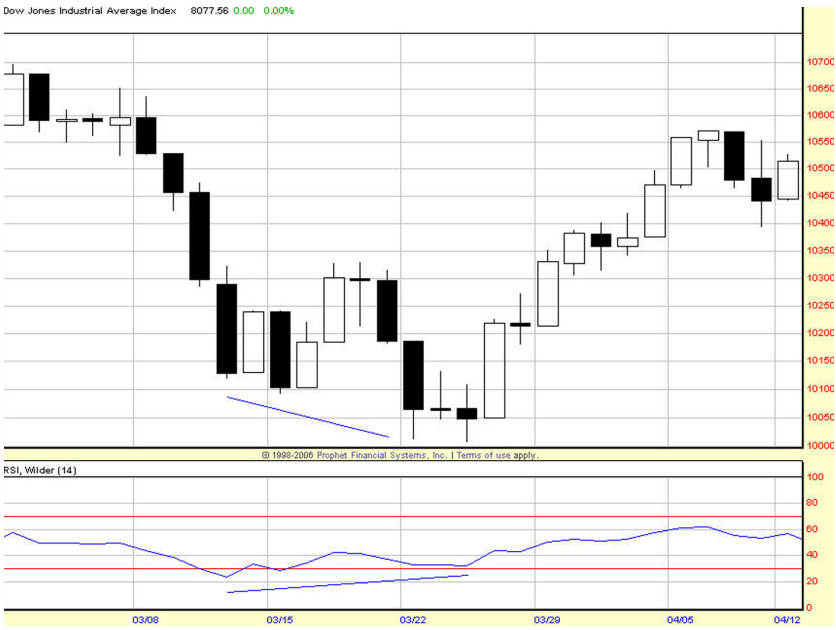
The negative divergence in the Relative Strength Index over the course of January was confirmed as the market for USD/CAD broke down early in February.

Chart courtesy of eSignal

While this breakdown was an excellent opportunity for momentum traders, those who had been long the month before could not say that they had not been warned. The failure of the RSI to confirm the higher highs in price—a failure that lasted for an entire month—was ample market intelligence that momentum to the upside was waning.

An example of a positive divergence comes from the Dow Jones Industrials as they experienced the first major correction of the 2004 bear market (Figure 7.2). Here, the positive divergence did not lead to a new trend; within a few weeks after the positive divergence, the Dow Industrial Average had rolled over en route to fresh lows. However, for traders who were short that first major correction of 2004, and momentum

Figure 7.2 | Dow Jones Industrial Average Daily | February 2004-April 2004



As the 2004 bear market was just beginning, the positive divergence in the RSI provided the first counter-trend bounce in March.

Chart courtesy of Prophet Financial Systems. Inc.

traders looking to exploit reversals, the positive divergence provided plenty in terms of both exit warning and entry opportunity.

The exit warning arrived on March 25th, just as the RSI was hooking higher to complete the higher low that is the signature of the positive or bullish divergence pattern. After that close, there was simply no reason for a trader betting against the Dow Jones to continue to do so.

The confirmation of the positive divergence as a reversal pattern came two days later on the follow-through confirmation close to the upside. Not only was the bullishness of this session, and the ones following over the next six-odd days, brought on by those who were short and covering their positions later than they would have preferred, but also by momentum technicians who correctly saw in the positive divergence an opportunity for gain.

Failure Swings

The idea of the failure swing is similar to the idea behind divergences and the 2B technique discussed in the first section. The set-up for a failure swing begins when a market makes an overbought or oversold extreme in the RSI. Let's use the example of a bearish failure swing that can occur at a market top. The market moves higher, pushing the RSI above 70 to clear overbought territory. The RSI then pulls back below 70, moving back from overbought territory, before rallying again. Only this time, the RSI fails to re-enter overbought territory (i.e., fails to move above 70) and instead, reverses and moves low enough to fall below the low between the initial RSI peak (the one that made it above 70) and the second RSI peak (the one that failed to make it above 70).

What happens is that the RSI fails to follow-through—to the upside in the case of tops and to the downside in the case of bottoms. Essentially, the RSI makes a lower high (or a higher low) and that action, in combination with the penetration of the overbought or oversold level, is what signals the failure swing.

Figure 7.3 | September Silver | Daily | May 2002-August 2002

A failure swing in silver futures in July 2002 helped traders take position in advance of the massive selling that hit the market at the end of July and again in mid-August.

Chart courtesy of Prophet Financial Systems. Inc.

Here are two examples, one bullish and one bearish, of failure swings in action. Figure 7.3 looks at the summer 2002 top in silver futures and Figure 7.4 looks at the end of the bear market in the S&P 500 in August 2004.

The instance of the top in silver futures in the summer of 2002 is interesting because so often a technician will see all the signs of a top except he will lack a specific pattern—especially the higher high necessary for a 2B or a negative divergence. The failure swing offers another sort of pattern that can also catch a top or bottom.

Notice on Figure 7.3 how the silver market makes a high in early June, pulls back, and goes on to make a somewhat lower high in mid-July.

While there is no negative divergence because the second high is actually lower, the silver market has begun to display the lower highs that begin all market downturns.

A market downturn and failure swing is confirmed days after the second high as the RSI of the silver market moves down, back below the trough between the two peaks that correspond to the early June and mid-July highs. There was actually a pair of days where the market did not move much once the failure swing developed; days that, as of the close, actually confirmed the failure swing and the likelihood of lower prices. Those lower prices came swiftly afterward, leading the way to a major decline in silver prices.

The bear market bottom of 2004 in the S&P 500 did feature a short-term positive divergence that would have been the final signal that downside momentum was waning and that an opportunity to the upside might be in the making. However, that market also created a bullish failure swing in the RSI that would have provided excellent confirmation of the positive divergence, which was to materialize soon afterward.

In Figure 7.4, the S&P 500 was making lower lows going into August 2004—and the RSI was confirming those lower lows with lows of its own. The low of July was followed by a lower low in August in the S&P 500. And the low of July in the RSI was followed by a lower low in August, as well.

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But shortly after the August low, the S&P 500 moved higher, causing the RSI to rally up and cross over the high point between the two troughs created by the July and August lows. In crossing over this threshold, the RSI was signaling a drop-off in momentum to the downside and the potential for movement in the other direction in the event of a confirming close.

That confirming close came a day later, chasing away all those who had been both short and slow to cover, and emboldening those short-term momentum technicians who saw in both the short-term RSI positive di-

Figure 7.4 | S&P 500 Index Daily | July 2004-September 2004

The bullish failure swing here in the S&P 500 in August anticipated the end of the 2004 bear market in the S&P 500.

Chart courtesy of Prophet Financial Systems. Inc.

vergence and the month-on-month bullish failure swing an opportunity to the upside.

Chande's Critique and StochRSI

I mentioned a critique of the RSI; a critique that, to be fair, is really extended toward all momentum oscillators. This critique was put forward by market technician Tushar Chande and Stanley Kroll in their book, *The New Technical Trader.* Chande and Kroll's critique of momentum oscillators is one that has been widely understood, if not widely accepted, by most technical analysts.

The core of the Chande critique is expressed by the following summary:

- None of them is a "pure" momentum oscillator that measures momentum directly.
- The time period of the calculations is fixed, giving a different picture of market action for different time periods.
- They all mirror the price pattern; hence, you may benefit more directly trading prices themselves.
- They do not consistently show extremes in prices because they use a constant time period.
- The smoothing mechanism introduces lags and obscures short-term price extremes that are actually valuable for trading.

Much of Chande and Kroll's critique is boilerplate and accepted by momentum traders as merely the reality of their technical surroundings. What interested me in Chande and Kroll's work was not the problem they found in other indicators, but more the indicator (or indicators) they saw as the solution.

There are a number of new, interesting indicators in *The New Technical Trader*. One of the ones that has gained a measure of widespread use is StochRSI (Stochastic Relative Strength Index). What is interesting about StochRSI is that it attempts to deal with the problems of momentum indicators by combining two of the more popular ones: the stochastic oscillator and the RSI.

Specifically, StochRSI is intended to improve the RSI. One "problem" that momentum indicators have is the inability to reveal true overbought and oversold extremes in trending markets. Typically, the RSI is considered overbought above 70 and oversold below 30. But because many markets will continue to move higher even after becoming overbought, the ability of the RSI to spot overbought tops and oversold bottoms is diminished.

I consider this aspect of the RSI to be far more a feature than a bug. But for those who want to use overbought and oversold levels in a more traditional way, this tendency in the RSI is a problem.

The StochRSI, then, is a stochastic of the RSI—an indicator of an indicator. In the same way that the stochastic, on its own, measures where a market closes within a range of n-periods, the StochRSI measures the readings on the RSI within a range of n-periods.

Wrote Chande and Kroll:

> *The sensitivity of the StochRSI overcomes the disadvantages of using a fixed number of days in its calculation and the tendency of the built-in RSI smoothing to mask short-lived price extremes while showing swing failures in RSI. The ability to spot short-term extremes in RSI (and momentum) is its principal advantage. The stochastic RSI is a more consistent indicator of overbought and oversold conditions simply because we are measuring its position within the most recent range.*

How do traders read the StochRSI? The StochRSI ranges from 1 to 0, with 1 being the highest possible reading and zero being the lowest. The StochRSI is considered overbought at a reading of 0.80, and oversold at a reading of 0.20. The oscillator generates buy signals when the indicator falls below the 0.20 level and then rises back above that level. Sell signals are generated when the indicator rises above 0.80 and then falls back below that level. StochRSI can also be used to spot divergences in the same way as the RSI or other momentum indicators do.

Let's look at some examples of trading the StochRSI based on buying oversold and selling overbought conditions in trends. Figure 7.5 is a chart of the Dow Jones Industrial Average, which shows the bull market in the index from the bottom in March 2007. We can see how the StochRSI entered oversold territory in late February and then exited oversold territory in early March. This is one way that buy signals in the StochRSI are created.

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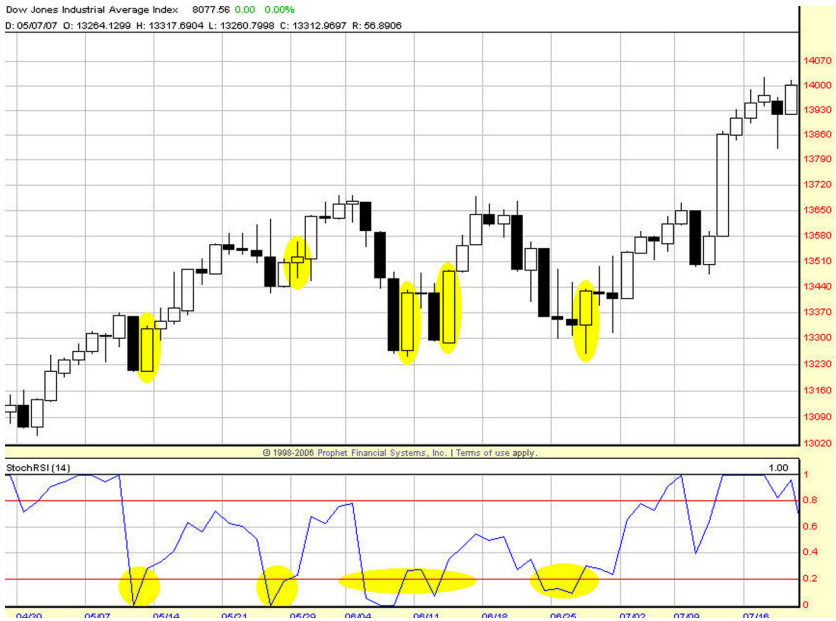
Figure 7.5 | Dow Jones Industrial Average
Daily | March 2007-July 2007



Movements into and out of oversold territory represent signals of upside momentum to traders using the StochRSI.

Chart courtesy of Prophet Financial Systems. Inc.

Personally, I think waiting for a confirming close—a close above the high of the session during which the trading signal was created—is the best way to avoid getting whipped into bad positions. Sticking to that thinking here, we have a StochRSI buy signal as of the close of March 6. Two days later, on March 8, we get our first close above the high of March 6. That close, on March 8, is to be bought (or, failing that, the opening of the following session.)

The next clear instance of buying an oversold market does not come until the first half of May. Here, the StochRSI dives down sharply below the oversold level before bouncing back out of that area just as swiftly. The buy signal arrives on May 11th. The confirming close arrives one day (ac-

tually one weekend) after on the following Monday, May 14th. A similar type of buy signal is also generated in the second half of the month.

A third approach to StochRSI resembles the same sort of treatment of overbought and oversold levels that I introduced in the section on the stochastic. Namely, when the StochRSI enters, exits, and then re-enters overbought territory in an uptrend, that re-entry is often a powerful signal for a trade to the upside. At the same time, when the StochRSI enters, exits, and then re-enters oversold territory in a downtrend, that re-entry can be a strong signal for a short trade. Wrote Chande and Kroll, "it's important to reenter the market if StochRSI again rises above 0.80 or falls below 0.20."

Let's go back to our chart of the Dow industrials from the March bottom to early July. Notice the number of times during March and April in particular that the StochRSI enters overbought territory, leaves that territory, and then re-enters. If the market were in a downtrend, these bouts of being overbought would be opportunities to sell; however, with the market in an uptrend, these instances when the market moves back into overbought territory are actually buy signals.

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Note when StochRSI re-entered the overbought territory in early April and early May. This re-entry in April set the stage for a rally in the Dow from the 12,500 area to over 13,000 by the end of the month. A similar "re-entry" in early May helped anticipate the Dow's move from the 13,000 area to more than 13,600 in the same amount of time.

While I have tended to focus on what a technical indicator can do as opposed to what it cannot, the StochRSI shows what can be done when a technicians does decide to rework and reconfigure an indicator in an effort to improve it. The StochRSI, to my mind, improves on the RSI in a number of ways, and those ways that allow the RSI to be used in the same way as the stochastic are perhaps among the most helpful improvements. Even the hinge or hook approach discussed in the section on stochastics can be applied to the StochRSI.

None of this, as far as I'm concerned, makes the study of price action in and of itself irrelevant. Again, price first and everything else second. But when choosing from among the various possible "seconds," the StochRSI has shown itself to be a worthy oscillator for momentum traders to include within their arsenal of trading tools.

Test Questions

1. A divergence in the RSI signals:
   a. A waning of momentum
   b. A gain of momentum
   c. New momentum in the opposite direction
   d. An entry point

2. With what levels are traders using the Relative Strength Index (RSI) concerned?
   a. 0 and 100
   b. 80 and 20
   c. 70 and 30
   d. 10 and 90

3. A divergence occurs when:
   a. A momentum indicator confirms new highs or lows in price
   b. A momentum indicator does not confirm new highs or lows in price
   c. A momentum indicator confirms a trending indicator
   d. Momentum indicators cannot be used to spot divergences

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Eight:
MACDH

The moving average convergence-divergence histogram (MACDH) was the first technical indicator that I started using regularly after years of writing about the financial markets for *Traders.com Advantage, Working-Money.com,* and *Technical Analysis of Stocks & Commodities magazine*.

The MACDH was the perfect combination: an indicator that could be used as both a trend-following tool as well as a momentum oscillator. John Murphy (1996), writing about the moving average convergence-divergence (MACD) indicator, called it "the best of both worlds" and then referred to the moving average convergence-divergence histogram as a way of making "the MACD even better." Alexander Elder, who also gave the moving average convergence-divergence histogram high marks in his excellent trading primer, *Trading for a Living*, said of the indicator (1993):

> *MACD-Histogram offers a deeper insight into the balance of power between bulls and bears than the original MACD. It shows not only whether bulls or bears are in control but also whether they are growing stronger or weaker. It is one of the best tools available to a market technician.*

This is why I began a discussion of momentum indicators with Japanese candlesticks. And why the stochastic, in my opinion, is so useful. Both Japanese candlesticks and the stochastic help the trader see as graphi-

cally as possible which side—those betting on higher prices or those betting on lower prices—is winning and which side, as Elder says of the MACDH, is "growing stronger or weaker."

This is what momentum indicators that work do: they make it easier to see who is winning and how dominant that winning is.

There are a number of ways to use the moving average convergence-divergence histogram indicator. As an oscillator, traders can use crosses of the zero line, instances when the MACDH goes from positive to negative or vice versa, to provide trading signals. Also, the oscillator-like characteristics of the MACDH make it useful in spotting divergences between the indicator and price. In this way, the MACDH can be used to confirm other oscillators like the RSI or the stochastic, set-ups like the 2B, and Japanese candlestick reversal patterns.

Market technicians can also use the histogram aspect of the indicator to look for specific patterns that signal a shift in momentum. These patterns, in the proper context, alert traders to moments when momentum temporarily wanes, and then resumes. These moments often presage significant surges in momentum that can be exploited for short-term gain.

The MACDH consists of the moving average convergence-divergence indicator and a signal line. The moving average convergence-divergence indicator was invented by Gerald Appel, and consists of two lines. The first line, the MACD line, is built by taking the difference between two exponential moving averages, typically of 12 and 26 periods. Then an exponential moving average of that MACD line is taken. That exponential moving average is called the signal line and usually consists of 9 periods.

The MACD histogram, introduced by Thomas Aspray, simply measures the difference between the MACD line and signal line and graphically represents it in the form of vertical lines or bars. The MACD histogram does not necessarily provide more information than the MACD—just as the Japanese candlestick does not necessarily provide more information than the bar chart. But the MACD histogram, or MACDH, makes that

information much easier to read and, in doing so, makes that information more readily available for analysis and action.

There are a number of patterns that are worth looking for in the MACD histogram. Divergences, as I mentioned before, are very easy to spot using the MACD histogram. There is also an interesting phenomenon that Elder describes in *Trading for a Living* that is especially helpful when markets are making tops or bottoms and the potential for reversal is great. Elder observes:

> *A record peak for the past three months in daily MACD-Histogram shows that bulls are very strong and prices are likely to rise even higher. A record new low for MACD-Histogram for the past three months shows that lower prices are likely ahead.*
>
> *When MACD-Histogram reaches a new high during a rally, the uptrend is healthy and you can expect the next rally to retest or exceed its previous peak. If MACD-Histogram falls to a new low during a downtrend, it shows that bears are strong and prices are likely to retest or exceed their latest low.*

When combined with divergence analysis and the reversal patterns of Japanese candlesticks, new highs or lows in the MACDH can provide powerful confirmation that a market is ready to move (Figure 8.1).

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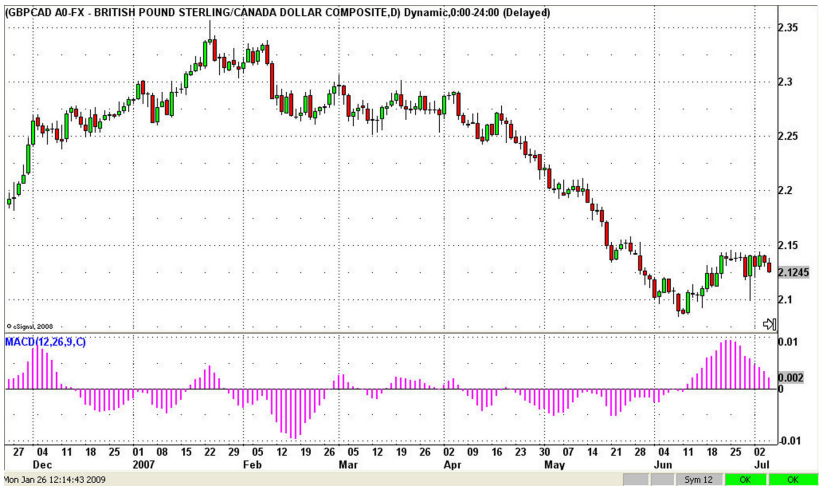
But tops and bottoms only come along so often. Much of the time, market technicians find themselves somewhere at the beginning, middle, or end of a trend, looking for opportunities to take advantage of the market. Here is where another sort of pattern in the MACDH can be very helpful in providing timely entries.

When a market is advancing, technicians should look for an instance where a rising series of MACDH bars is interrupted by a lower bar. That lower bar represents a lull in bullish momentum. The next thing to look for is where the histogram ticks back up. Numerically, the values of the histogram bars in the pattern might look something like this: 1.20, 0.90, 1.25.

Figure 8.1 | British Pound/Canadian Dollar Daily | December 2006-July 2007



Notice how a deep MACDH trough in February anticipates the bear market that follows over the next several months. The MACDH peak in June suggests strongly that the bear market in the British Pound/Canadian Dollar pair has ended and that higher prices are likely going forward.

Chart courtesy of eSignal

If the histogram is positive, above the zero line, then the pattern looks something like this: M-m-M, with the lower case letter representing the dip in the indicator values.

If the histogram is negative, below the zero line, then the pattern numerically might resemble something like this: -1.00, -1.50, -0.75. The shorthand for this sort of pattern is P-p-P.

The last bar in the pattern, the second "M" or the second "P", is the key session. If the market closes above the high of the second "M" or the second "P" session, then a long position can be taken as of that close.

When a market is declining, technicians should look for an instance when a falling series of MACDH bars is interrupted by a higher, less

shallow bar. That higher bar represents a lull in bearish momentum. The next thing to look for is for the histogram to tick back down. Numerically, the values of the histogram bars in this pattern might look something like this, if the pattern appears above the zero line: 0.75, 1.25, 1.00. The shorthand for such a bearish pattern is m-M-m.

When the histogram pattern occurs below the zero line, in negative territory, it may numerically look something like this: -2.50, -1.75, -2.75. The short hand for this kind of bearish pattern is p-P-p.

As is the case with the bullish patterns, the second "m" or the second "p" is the key session. If the market closes below the low of the second "m" or the second "p" session, then a short position can be taken as of that close.

Elder suggests that this method can provide a bit too much in the way of trading signals on daily charts and, as such, prefers using it with weekly charts. In the past few years that I have used the MACD histogram this way, I have not found the daily, or even hourly, charts on major markets (such as index, futures and currencies) to be problematic. And when used as a tool to confirm signals from other sources, such as Japanese candlesticks or stochastics, the MACD histogram is far more likely to be of assistance than hindrance when trading momentum.

Whether or not you end up using the "M" and "P" shorthand when using the MACDH—shorthand borrowed and extended from Elder's explanation of the MACDH—that shorthand can be helpful in differentiating the different types of momentum opportunities that the histogram can reveal. At root, there are four patterns, two bullish and two bearish.

One bullish pattern exists for when the MACDH is above the zero line (the M-m-M pattern) and the other bullish pattern exists for when the MACDH is below the zero line (the P-p-P pattern). In both instances, the bullishness of the signal is confirmed when the market shows follow-through on a closing basis (Figure 8.2).

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An example of the bullish M-m-M pattern is shown in Figure 8.3, the chart of June Treasury note futures from 2007. The M-m-M of the pat-

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Figure 8.2 | Telecommunications HOLDRS Trust (TTH)
Daily | April 2007-May 2007

Bullish P-p-P patterns provide momentum traders with excellent entries during this uptrend in telecommunications stocks.

Chart courtesy of Prophet Financial Systems. Inc.

tern is intended to replicate the high-low-high of a histogram that experiences a temporary lull in upside momentum (a lull represented by the lowercase "m"). When the market regains its momentum (represented by the second uppercase "M"), a signal is given that the market is likely to continue going higher. This signal is confirmed when the market closes above the high of the day when momentum re-asserted itself.

Note how the market was moving lower going into mid-February. A series of shorter and shorter histogram bars reflected waning momentum to the upside. Then, the histogram bars suddenly start becoming taller. The three days of February 12, 13, and 14 generated the characteristic M-m-M pattern that provides a bullish signal for the market. This signal

Figure 8.3 | June 10-Year Treasury Note
Daily | January 2007-March 2007

Two bullish M-m-M patterns in the second half of February signal an opportunity to the upside in June T-notes.

Chart courtesy of Prophet Financial Systems. Inc.

was confirmed a day later, as the market closed above the high of February 14th. Five days after the entry, the market for June Treasuries began moving up sharply, amply rewarding traders who bought the bullish M-m-M pattern in the histogram.

The other bullish pattern, the P-p-P pattern comes when the MACDH is below the zero line. This pattern tends to represent markets that are temporarily somewhat oversold. As such, they are often great patterns to spot in uptrends, as is the case with the example of the telecom HOLDRS trust or TTH.

Going back to Figure 8.2, there are actually two bullish P-p-P patterns in the chart of the telecom HOLDRS from the spring of 2007. The first comes in the first half of April with the TTH market moving sideways with a downward bias. The middle lowercase "p" in this instance reflects the low point of momentum to the downside and the subsequent uppercase "P" represents the evidence that downside momentum has indeed waned. The bullishness of the P-p-P pattern, however, is not confirmed until prices close above the high of the second "P" session.

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In the example of the telecom HOLDRS, that early April P-p-P pattern is filled mid-month, right before the TTH goes into a mild, five-day slide. Interestingly, that five-day slide only sets up another bullish P-p-P pattern late in the month. This second pattern, it could be argued, was the charm. The P-p-P of late April was confirmed before the new month and the TTH began moving assertively higher over the balance of May.

On the downside, there are two patterns to keep in mind: m-M-m for markets with the MACDH above the zero line, and p-P-p for markets with the MACDH below the zero line.

Consider the example of July lumber futures in 2007 (Figure 8.4). Given the unfolding housing market bust, the lumber market had been in a downtrend when this bearish m-M-m pattern appeared. More specifically, the lumber market was bouncing as the m-M-m pattern developed—with the uppercase "M" representing the high point of that bounce as seen through the MACDH. When the uppercase "M" is followed by the lowercase "m" (representing the shorter histogram bar and the resumption of waning upside momentum), technicians have a signal that a trading opportunity to the downside may be in the making.

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As always, such opportunities are confirmed by a follow-through close below the low of the second lowercase "m" day. In the case of July lumber, it took approximately four trading days for the m-M-m pattern to be confirmed. But nine days after that, July lumber had lost an additional eight points (each point in lumber futures being worth $110 as of this writing).

Figure 8.4 | July Lumber, Daily | March – May 2007

A sizable bearish m-M-m pattern in April sets up traders to take advantage of the lumber market as the pattern is confirmed, sending prices still lower.

Chart courtesy of Prophet Financial Systems. Inc.

The last pattern in the moving average convergence-divergence histogram is the bearish p-P-p pattern. Again, this pattern is one that traders should look for in declining markets when the MACDH is below the zero line.

The decline in the British Pound/Canadian Dollar (GBP/CAD) currency pair in the late spring and early summer of 2007 gives us an opportunity to see a bearish p-P-p pattern. Looking at Figure 8.5, the GBP/CAD had been in a downtrend since topping out in January 2007. But the pair spent the first few months of the year moving more sideways than down. All this changed in the second half of April, as the GBP/CAD broke down to year-to-date lows and continued moving lower.

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Figure 8.5 | British Pound/Canadian Dollar Daily | May 2007

A bearish p-P-p pattern in mid-May is confirmed, leading to a continued decline in the GBP/CAD over the balance of the month.

Chart courtesy of Esignal

It was in mid-May that the p-P-p pattern developed. The histogram bars had been growing shorter since early May, reflecting a waning momentum to the downside. The uppercase "P" in the pattern's shorthand refers to the session when downside momentum had become particularly weak—relative to the following session when downside momentum (shown graphically as a lowercase "p" that stretches downward more than an uppercase "P") re-asserted itself.

This was the signal that the downtrend was vulnerable to resumption; however, it was not until the market closed below the low of the session of the second lowercase p, that the bearishness of the mid-month p-P-p signal was confirmed. The result was another month of losses for the British pound against the Canadian dollar.

The upside of these patterns in the MACD histogram is also its downside. As Elder noted, daily charts create these patterns in the MACD

histogram with some frequency. As such, some who use these patterns use them mostly with weekly charts, something Elder recommends. As I said before, I have found these patterns to provide frequently actionable signals on daily charts—particularly when used in concert with other technical methods such as the BOSO or during "MUST buy/MUST sell" market periods as revealed by moving average trios.

Most important, these patterns in the MACD histogram alert technicians to changes in momentum, changes that can create opportunities in the short- and intermediate-term. Trade and risk management is a part of every methodology and the MACD histogram patterns are not any different. But when used alongside other technical tools and with the proper sense of risk and reward, the MACD histogram is as worthwhile a single technical indicator, let alone single momentum indicator, as technicians are likely to find.

Test Questions

1. The MACDH can be used:
   a. To provide trading signals when it goes from positive to negative or vice versa
   b. To spot divergences between the indicator and the price
   c. To confirm other oscillators
   d. All of the above

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Nine:
Moving Average Trios

I first came across moving average trios after reading George Kleinman's book, *Mastering Commodity Futures and Options*. Kleinman was a big fan of moving averages in this book, writing:

> *I've found it much easier, and ultimately much more profitable, to take a chunk out of the middle of a move, and this is what moving averages are designed to do. Moving averages are trend-following tools. This means they do not anticipate the market, they lag it. They are designed to help us determine two things: what the current trend is, and when the trend has turned. However, they can only tell us this after a trend is in place. By definition, this will be after the move is already underway.*

One moving average might be a trend trading tool. And two moving averages may make for trend-based entries and exits. But the combination of three moving averages creates an analytic environment conducive to momentum trading.

Generally, moving average trios rely on three moving averages of distinctly different lengths. There is usually a very short-term moving average, between eight and ten periods in duration, an intermediate-term moving average that tends to be twice as long as the shorter-term moving average, and a long-term moving average that is at least twice as long as the intermediate-term moving average.

The point of the three moving averages is multifold. The longest moving average helps establish whether or not the market is trending and, if so, in which direction that trend is moving. The two shorter moving averages help the trader see growing momentum within the context of the trend (or lack thereof). Growing momentum is revealed when the shortest moving average catches up with and overtakes the intermediate-term moving average.

Kleinman uses a 2-, 9-, and 30-period trio of exponential moving averages in order to get trading signals. He uses the longest EMA, the 30-period, exclusively as a trend-tracking indicator. He will only buy markets trading above the 30-period EMA, and will only short markets that are trading below the 30-period EMA. Specific trading signals come from the crossing of the 2- and 9-period moving averages. When the 2-period EMA crosses above the 9-period EMA and both moving averages are above the 30-period EMA, then a buy signal has been generated. When the 2-period EMA crosses below the 9-period EMA and both moving averages are below the 30-period EMA, then a short signal has been generated.

The combination I have been using for the past several months involves a more pedestrian combination of the 10-, 20- and 50-period exponential moving averages. But I add a flourish that comes courtesy of David Nassar who, in his DVD, *Foundational Analysis*, emphasizes that moving average trios can reveal a sweet spot that can be especially worth noting for momentum traders.

This sweet spot, per Nassar, represents the difference between when a market can be traded and when a market "must be traded." It comes about just as the three moving averages roll over into what I call bullish or bearish alignment from a previously "unaligned" or out of alignment position.

By alignment, I mean a condition where the shortest moving average is leading the intermediate-term moving average, and the intermediate-term moving average is leading the longer-term moving average. Graphically—and using my moving average trio as an example—this

means that bullish alignments would feature the 10-period EMA on top of the 20-period EMA, which is then on top of the 50-period EMA. The opposite would be the case in a bearish alignment. The 10-period EMA would be on the bottom, the 20-period EMA above it, and the 50-period EMA higher still.

By "realignment" I add what I think is a crucial element. As a momentum technician, I am looking for the moment when the three moving averages snap into alignment—bullish or bearish. I do not want to be in the trade any earlier, and I'd prefer not to be in the trade too much later. The momentum opportunity comes as the moving averages move from being out of alignment into alignment. This is where I want to be. And

Figure 9.1 | S&P 100 Index ($OEX), Daily | September 2003-December 2003

This bullish realignment of the moving averages developed just as the $OEX was emerging from the sluggish sideways trading of the fall of 2003

Chart courtesy of Prophet Financial Systems. Inc.

as soon as the realignment is confirmed with a confirming close, it is a market that "must be traded."

The breakout in the S&P 100 late in 2003 (shown in Figure 9.1) is one example of how moving average trios can reveal a market that is gaining the momentum to drive a market higher. The S&P 100, or $OEX, had been trading sideways since late September. The market was making higher lows, but had not shown the ability to move aggressively higher as it had done in the first half of the year.

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Then, in late November, the 10-day exponential moving average dipped below the 20-day. Days later, when the 10-day EMA moved back above the 20-day, creating a bullish realignment of the 10-, 20- and 50-day

Figure 9.2 | December Crude Oil, Daily | July 2006-September 2006

A bearish realignment suggests a major shift in the direction of crude oil going into the fall of 2006.

Chart courtesy of Prophet Financial Systems. Inc.

exponential moving averages, the S&P 100 simultaneously broke out above the trading range that had pinned prices down for several weeks.

Bearish realignments are also opportunities for technicians to spot increases in momentum. The collapse of crude oil in the fall of 2006 is one interesting example (Figure 9.2). The market for crude oil topped in the first half of July and the bearish realignment did not occur until the second half of August. But the momentum to the downside that developed by the end of summer was powerful enough to provide plenty of opportunities for traders to exploit the abundance of sellers and panic of buyers.

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The actual realignment occurred as of the close of August 18th. But the realignment was not confirmed until a few days later on August 28th when the market closed below the low of the 18th. The collapse that followed was remarkable—and well worth waiting the week or so from signal to confirmation.

What the moving average trio does is twofold. In and of itself, bullish and bearish realignments are strong signals of a market that is gaining in momentum. When the market confirms those realignments by closing above the high of the bullish realignment day in an uptrend or below the low of the bearish realignment day in a downtrend, a technician can reasonably expect the market to continue moving in the direction of the realignment.

The realignment also alerts technicians and traders that the market has entered that specific "must be traded" phase. This means that in addition to the realignment signal, we can use other momentum tools such as stochastic hooks and MACDH "M" and "P" patterns to exploit short-term counter-trend stalls in the new trend.

Test Questions

1. Which of the following momentum indicators is NOT known for combining momentum and trend characteristics?

   a. Relative Strength Index

   b. Moving Average Trios

   c. TRIX

   d. MACDH

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Chapter Ten:
TRIX

Technical analysis is most efficient when its simplicity is embraced. The genius of the stochastic—a genius also reflected in candlestick lines—is that it reveals who is coming closer to winning the battle of the session: those betting on closing prices near the highs versus those betting on closing prices near the lows. The genius of the moving average convergence-divergence histogram is that it, as John Murphy observed, "generates action signals much sooner."

Hutson's TRIX

We see this same simplicity in the TRIX. Introduced in the pages of *Technical Analysis of Stocks & Commodities* magazine in the early 1980s by Jack Hutson (who was also the founder and publisher), the TRIX or triple smoothed exponential average, pushes the envelope of anticipating price action through a combination of exponential moving average and rate of change calculations.

The TRIX is calculated by taking an exponential moving average of the closing price. An exponential moving average of that initial exponential moving average is then taken. Then a third exponential moving average is taken of the second exponential moving average (which is, remember an exponential moving average of an initial exponential moving average

of closing prices). Finally, a one-period rate of change of the now triply-smoothed exponential average is taken to get the value for the TRIX.

There are a number of ways to use the TRIX. Because the indicator oscillates above and below a zero line, traders can use crossovers of that line to initiate long positions in uptrends and short positions in downtrends. As an oscillator, the TRIX can also be used to spot divergences between price and the indicator. And like the stochastic, traders can use hooks in the TRIX to help buy dips and sell bounces. Lastly, by using a signal line—which is yet another exponential moving average—traders can use moving average crossover patterns such as golden and dead crosses to enter and exit markets.

We'll look at a few examples of each way of using the TRIX, including day-trading examples using 15-minute charts.

The zero line crossover is perhaps the most basic, straightforward way to use the TRIX. When the market closes above the zero line, it is considered bullish for the market, all things considered. When the market closes below the zero line, it is considered bearish for the market.

Consider Figure 10.1, an example of a bullish zero line crossover. The copper market, basis December futures, was moving sideways over much of the fall of 2003. In early October, however, the TRIX broke back up above the zero line and continued moving higher. At the same time, prices for copper were nearing the top of the range that had contained prices for a month. Within days of the bullish zero line crossover, the copper market was flying to the upside, gaining ten cents in less than a month.

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Bearish zero line crossovers can also provide sound signals to alert traders of the potential for an increase in momentum to the downside. Consider the chart of October sugar in the late spring of 2006 (Figure 10.2).

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Interestingly, the sugar market here saw its TRIX line cross below the zero line twice. By waiting for a confirming close, the trader avoids some of the whipsawing that occurs after the first bearish zero line crossover. Ironi-

Figure 10.1 | December Copper
Daily | September 2003-October 2003

A bullish zero line crossover in the TRIX in early October helped traders enjoy a strong move higher in copper futures over the balance of the month.

Chart courtesy of Prophet Financial Systems. Inc.

cally, the confirming close is the same for both zero line crossovers, and the result is a tidal wave of momentum to the downside for sugar prices.

As is the case with virtually all momentum oscillators, the TRIX is also effective in helping technicians spot divergences. Remember that divergences occur when indicators are able to tell that momentum is not as strong as price action might be suggesting. As such, divergences are an invaluable tool to help confirm reversal signals produced from candlestick patterns, 2B patterns, or reversal signals from other momentum indicators.

Figure 10.3 features both negative and positive divergences in the gold market in the first half of 2005. Basis April futures, the gold market made

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Figure 10.2 | October Sugar Daily | April 2006-June 2006

A zero line crossover in the TRIX to the downside in mid-May led to further declines in the sugar market.

Chart courtesy of Prophet Financial Systems. Inc.

a low in the first half of January 2005, then went on to make a lower low in the first half of February. However, at the same time, the TRIX was making a pair of higher lows. This pattern, in which a momentum indicator makes a series of higher lows while the underlying market makes a series of lower lows, is the signature of a positive divergence and an opportunity for reversal.

We can see an example of a negative divergence in the very same chart as the February bounce in gold tops out in March. Notice how gold makes a high in February and then goes on to make a higher high in March? At the same time, the TRIX was making a pair of lower highs.

Figure 10.3 | April Gold Daily | December 2004-March 2005

A positive divergence in the TRIX in February took the market up, and a negative divergence in March helped guide the market back down.

Chart courtesy of Prophet Financial Systems. Inc.

Again, while divergences do not always result in reversals, they are always warnings of waning momentum and need to be treated as such. The shorter-term your time frame, the more you need to be concerned about divergences when they appear. For short-term momentum traders, even the appearance of a divergence—let alone confirmation of one—can be enough to induce profit-taking.

Like the stochastic and the RSI, the TRIX can also be used to flag momentary stalls in momentum. This hinge or hook technique is a great compliment to the TRIX's ability to spot divergences. Often a market will bottom, rally, and then retest that bottom before moving higher.

Using the hook to re-enter a market after a slackening in momentum is one of the other sound ways to use the TRIX.

The hourly chart of the S&P 500 Index (Figure 10.4) focuses on the various confirming closes after bullish hooks in the TRIX. These were opportunities during the spring rally in 2009, an advance that many momentum traders were able to take advantage of in the midst of a great deal of trader and investor pessimism.

Hooks work to the downside as a way of determining when a bounce in a downtrend has run its course. When hooks downward are confirmed, even sideways markets can give way rapidly.

Figure 10.4 | S&P 500 Index
Hourly | March 11, 2009-March 17, 2009

Bullish hooks in the TRIX provided intraday and hourly swing traders with numerous opportunities to climb on board as the S&P 500 moved higher from its spring lows.

Chart courtesy of Prophet Financial Systems. Inc.

Figure 10.5 is what the Dow Jones Industrials looked like in the hours before that spring correction.

Here, two bearish hooks developed during the downturn in February. Often, traders are reluctant to join markets that have already begun their moves. The TRIX in this instance helped show momentum traders where opportunities for shifts in momentum positions against the market most optimally could be taken.

One of the ways I have used the TRIX is in the intraday arena, studying 15-minute charts of the E-mini S&P 500 futures contract. Although a

Figure 10.5 | S&P 500 Index, Hourly | February 19, 2009-February 23, 2009

Bearish hooks provided two signals early in the second half of February on the hourly charts. Those sell signals provided traders with an opportunity to exploit the last few legs of the downturn before the spring rally in 2009.

Chart courtesy of Prophet Financial Systems. Inc.

lot of what seems to be working for me on a 15-minute basis likely has to do with the particular money management and trade management of the day trading system, the signals produced by the TRIX intraday have been valuable and worth following.

In particular, when looking at the intraday market, I have used the TRIX with a signal line. More than that, I have used specific patterns and specific types of crosses between the TRIX and the signal line to confirm shifts in momentum. These patterns are known as golden crosses and dead crosses and, like Japanese candlesticks, have their origin in the trading styles (and trading rhetoric) of the Far East.

Put simply, a golden cross occurs when a shorter moving average crosses above a longer moving average. This signifies an increase in momentum to the upside and is said to be "golden." A dead cross occurs when a shorter moving average crosses below a longer moving average. This signifies an increase in momentum to the downside and is given the sobriquet of "dead."

To use these crosses with the TRIX, a second line or signal line is required. The signal line takes the place of the shorter moving average to create the signals.

In addition to the crosses, however, are two other patterns. They occur when the longer moving average, or the TRIX in this case, hooks higher or dips lower. Hooks higher are called "bounces," while dips lower are called "falls." This idea of falls is identical to the hooks method discussed in the section on stochastics, the RSI, and earlier with the single line TRIX.

To best take advantage of the momentum-reading aspect of this indicator, golden crosses, which alert to the possibility of upside momentum, and falls, rather than dead crosses, are used to give warning that upside momentum is waning. In the proper context, the TRIX used this way can provide the sort of prompt signals that, upon confirmation by follow-through on a closing basis, momentum indicators are used for.

Figure 10.6 | S&P 500 Index Daily | April 2001-June 2001

The top of the spring rally in the S&P 500 in 2001 was signaled not only by an evening star pattern, but also by a "fall" in the TRIX.

Chart courtesy of Prophet Financial Systems. Inc.

The software I use, *Tim Knight's Prophet.net*, happens to draw green arrows to indicate golden crosses and red arrows to indicate falls. But the arrows only serve to highlight precisely where the signals are. By using falls to warn of waning momentum to the upside, rather than dead crosses, the TRIX with a signal line provides an earlier signal than it might otherwise.

The example of a fall shown in Figure 10.6 is the top of the spring rally in 2001 in the S&P 500. Within months, the market would be plunging lower into the lows that would eventually accompany the lows of September 11th and its immediate aftermath. In addition to forming a perfect evening star, the top of the rally also saw the TRIX develop a fall,

Figure 10.7 | Dow Jones Industrial Average
15-minute | February 23, 2009

Opportunities to bet against the Dow Jones Industrial Average on an intraday basis were plentiful during the market sell-off in the second month of the year in 2009.

Chart courtesy of Prophet Financial Systems. Inc.

signaling a loss of momentum to the upside. The bearishness of that fall was confirmed two days later as the S&P 500 fell another 30 points over the next two days.

This correction—it was not yet a bear market—ended with a golden cross, which anticipated a short-term bounce. But that bounce was met with another fall a few days later, as the market plunged to lower lows.

Like the other momentum indicators discussed in this book, the TRIX used in this way can also be a valuable tool for spotting and timing stalls in momentum that can be opportunities to buy a temporarily inex-

pensive market or sell a temporarily overpriced one. The chart of the intraday S&P 500 shows both golden crosses and falls. But insofar as it is the golden crosses that are confirmed with follow-through closes, technicians are getting confirmation of surges in momentum. At the same time, confirmed closes below falls, anticipate sideways movement at a minimum and an opportunity to take profits until the next golden cross is spotted and confirmed.

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Test Questions

1. Which of the following does NOT known represent one momentum indicator confirming another?

   a. A golden cross in the TRIX and a 1-2-3 trendline breakdown

   b. An evening star candlestick pattern and a 2B Top

   c. A positive divergence in the RSI and a Piercing Pattern on a candlestick chart

   d. A P-p-P pattern in the MACDH and an overbought reading of more than 80 in the stochastic

2. If the real bodies of a series of candlesticks are successively smaller, that pattern may represent:

   a. Growing momentum

   b. A trading range environment

   c. Waning momentum

   d. A potential breakout

For answers, please visit the Traders' Library Education Corner at www.traderslibrary.com/tlecorner.

Conclusion

I began this discussion about momentum and technical analysis with three observations: 1) that the most accurate momentum information comes from price itself, 2) that traditional momentum indicators are often better used in non-traditional ways, 3) and that many technical indicators that are not considered to be momentum indicators can actually form the basis of a momentum technician's method of entering and exiting markets. I hope that at this point, the reason why I put so much emphasis on these observations is clear.

The need to improve our ability to analyze price data using Japanese candlesticks is the product of the first observation. With regard to the second, both the BOSO and the hook methods of using momentum indicators point to non-traditional (or new traditional in the case of the hook) ways of entering and exiting markets that market technicians should consider. And, lastly, technical indicators like the moving average convergence divergence histogram (MACDH) can be used to serve both trend-following and momentum analysis requirements to great effect.

Market technicians need to be wary of using these indicators in suboptimal combinations. For example, both the hook and the MACDH patterns tend to serve the same purpose of catching momentary lulls in momentum just as momentum is returning to the market. As such,

there is no reason for a trader to use both the hook and the MACDH patterns at the same time. I have also found that the TRIX method involving the signal line, golden crosses, and falls tends to provide signals that are very similar to those produced by the hooks and the MACDH. Using the TRIX with a signal line and the crosses and falls in addition to the MACDH or the hooks of other momentum indicators is likely redundant.

I put a BOSO stochastic on every chart I create that uses indicators. The BOSO stochastic is an excellent compliment to the methods using the MACDH, the hooks, or the TRIX with a signal line described in the previous paragraph. I have found very little signal overlap between the entries suggested by the BOSO stochastic and those suggested by the MACDH, hooks, or the TRIX with a signal line.

Moving average trios work similarly to the BOSO stochastic by hinting at moments when markets "must be traded." I keep both on my indicator charts because visually, neither indicator gets in the way of the other, unlike trying to use multiple momentum indicators at the same time (to say nothing of the issue of indicator/signal redundancy).

Typically, I like to keep two charts of the same price action open at the same time. One chart is clean: nothing but the Japanese candlestick lines. The other chart is the indicator chart. My current preferences with daily charts of most markets, for example, include the moving average trios, the BOSO stochastic, and the MACDH on the indicator chart. For intraday analysis of securities like the e-mini S&P 500 Index, the TRIX with a signal line, golden crosses, and falls—along with a 50-period exponential moving average—have been my technical tools of choice.

But whatever tools you eventually determine to use, there are a few concepts worth keeping in mind as a momentum technician. And these concepts are perhaps best said here by way of closing. First, with momentum, timing is everything. Rickson Gracie, the legendary Brazil-

ian jiu jitsu fighter of the Gracie family, once told an interviewer: "there comes a moment without fail when an opponent makes a mistake. That moment cannot be missed."

Momentum technicians need to have the same attitude. In the same way that Brazilian jiu jitsu is based on waiting for the opponent to make a mistake, momentum technicians need to have the patience to wait for the market to make a mistake: to reveal weakness, to show that momentum is waning, to show that momentum is much stronger than before … and then pounce.

If your timing is right, then you do not need to be fast or powerful (i.e., overcapitalized). Move with haste. But do not hurry.

Second, and part of the first idea, is the notion that you should be wary of engaging a market, and wary of remaining in a market. Another way of thinking about this is to require confirmation before taking positions (the idea of the "confirming close"), but be ready to exit as soon as the momentum that supports your position is threatened.

Yes, this will mean leaving some money on the table. But in trading there are really just two options when you have a successful trade: either you are leaving some money on the table or you are giving some back. The latter is the curse of the trend trader, and the former is the "curse" of the momentum trader. It is just the cost of doing business. Never, ever be distracted by what you could have made.

And this dovetails into the third and last point. While it is important for momentum technicians to be vigilant for every opportunity the market gives, for every "mistake" the market makes, it is just as important to remember that if the "moment" is missed, another moment will come along. Unlike trend traders, who may have to wait for months for a decent trend to develop, momentum opportunities abound every day, every hour. Rather than chasing a missed opportunity, momentum technicians are often much better off waiting for the next one. It is an

advantage that momentum technicians have that they must exploit to avoid the psychological briar patch of chasing markets. There will always be another trade.

I hope that some of the ideas and tools discussed in these pages will go some distance toward making that next trade a winning one for you.

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