Trading Classic Chart Patterns

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WILEY TRADING

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*History measures the wealth of one's existence by the essence
of what remains, so I want it to have mattered that I lived.
Therefore, I dedicate this book to the Bulkowski brothers:
Dave, Rich, Tom, and Jim. Four explorers charting
different paths through unknown territory.*

Wish us luck.

*And to the innocent bystanders, the firemen, the policemen who died in the
terrorist attacks of September 11, 2001. You gave
your lives so that others may live. May I be fortunate enough
to have my life end with such style, such heroism.*

Preface

I am under attack. Every time I call engineering, they promise the same thing: "The shields will be up soon, Captain," yet the port side continues taking hits.

When I wrote *Encyclopedia of Chart Patterns* (Wiley, 2000), I knew the reference—with its chart pattern performance statistics—could change the shape of the financial world, but I did not know how upset those still believing the earth was flat would be. I fear this book is pushing deeper into enemy territory. You see, this book also uses performance statistics to illustrate my claims, but it goes further.

Have you ever wondered how much influence the general market has on performance? How about market capitalization? Should you really get excited when a gap occurs during the breakout? How important is high breakout volume anyway? This book details the answers to those questions and many more, but—and this is important—it presents an easy-to-use system that separates the chart pattern mongrels from the purebreds, the slackers from the overachievers. It gives you the knowledge to trade chart patterns, *and stocks*, successfully.

For the most popular and common chart patterns, review the chapter tables for a score, then total the scores. Scores above zero mean performance is likely to beat the median; scores below zero mean you should probably look elsewhere. Do not consider the scoring system as a robust, mechanical trading system, but more as an investment checklist. The method is not foolproof to be sure, but I am very pleased with out-of-sample tests and actual trades I have made using the system. I detail several in this book.

Now that my little ship has encountered customer reviews, news groups, chat rooms, and other violent anomalies, I am hoping the shield modifications this time around will do better. To those who quibble with the statistics, I ask

that you show me a better way, as David Ipperciel did when he told me about his horizon failure rate. To those who say the writing is too wordy, I say that I write for the novice investor—explaining concepts thoroughly—but also present challengingly new ideas for the professional. To those who scoff at chart patterns themselves, I suggest they continue searching until they find a trading style that works for them. It may include fundamental analysis, it may include technical indicators, or it may use chart patterns, but if it works, keep it and keep using it.

Chart patterns work for me. I began trading stocks more than 20 years ago, and now that is all I do—that is, except for the odd book, magazine article, puttering in the garden, playing my guitar, bird watching, and, well, you get the idea.

If you are new to chart patterns, technical analysis, or to stock market investing itself, have no fear. The first part of this book presents new research on trendlines, support and resistance, placing stops, selling considerations, and common trading mistakes. Part Two is where you find the warp engines that propel the book deeper into uncharted territory. I discuss the most common and popular chart patterns, provide the scoring system details for each pattern, and showcase the results. Consider Part Two as a reference section: alphabetically arranged chapters with plenty of easy-to-understand and easy-to-use tables with lots of pictures!

Think of this book not as advocating a trading system, but as a system to *select* better performing chart patterns. Do additional research as necessary, because how you trade your selections is up to you.

THOMAS N. BULKOWSKI
February 2002

Acknowledgments

I wish to thank David Ipperciel for giving me lessons on his *horizon failure rate*. I use it throughout the book. Thanks, David.

Thanks also to Bernice Pettinato of Beehive Production Services. If you ever write a book, her company is the best at shepherding it through production. Added bonus: She returns your manuscript bound with really long rubber bands. Think of the terror you can inflict!

Last, but just as important, are the editors responsible for this book, Pamela van Giessen and Claudio Campuzano. They have to put up with endless questions breeding numerous complaints from cranky writers. Fortunately, I was not one of them!

<div align="right">T.N.B.</div>

Contents

Trading Classic
Chart Patterns

Introduction

A ringing phone; the first indication that something was wrong. Very wrong. Especially when the person on the other end was Mary. "I own Cisco Systems," she gloated, and instantly I knew I was in trouble. I also owned the stock, and I knew that whatever Mary bought went down as sure as the sun sets in the west.

Mary is new to the world of stock market investing. She believes in fundamental analysis, but does not have the time or inclination to do it properly. Technical analysis? Forget it. If she looks at a stock chart at all, it only shows closing prices—like watching television using only a quarter of the screen.

To her, the small stake in a self-directed IRA—where she trades—is play money as her other, professionally managed retirement accounts hold the bulk of her savings. Make no mistake; she is a very talented, well-respected, senior vice president making big bucks at a growing company. She is not an early adopter—one who buys the latest cell phone because it is smaller than the dozens she already owns—but one who is willing to pay up for the good life: the in-ground swimming pool, the vacation time-share, dance and piano lessons for the kids, the BMW, the SUV, the frequent vacations to exotic locales. In other words, she lives well.

I am jealous.

THE NOVICE EXPERIENCE

Enough about Mary. Let us turn to the trade she made in Cisco Systems, shown in Figure I.1. When she called, I asked her why she bought 85 shares of the stock at 65. Her answer was as you would expect from a believer of fundamental analysis. She said Cisco was a good company with good earnings and market momentum.
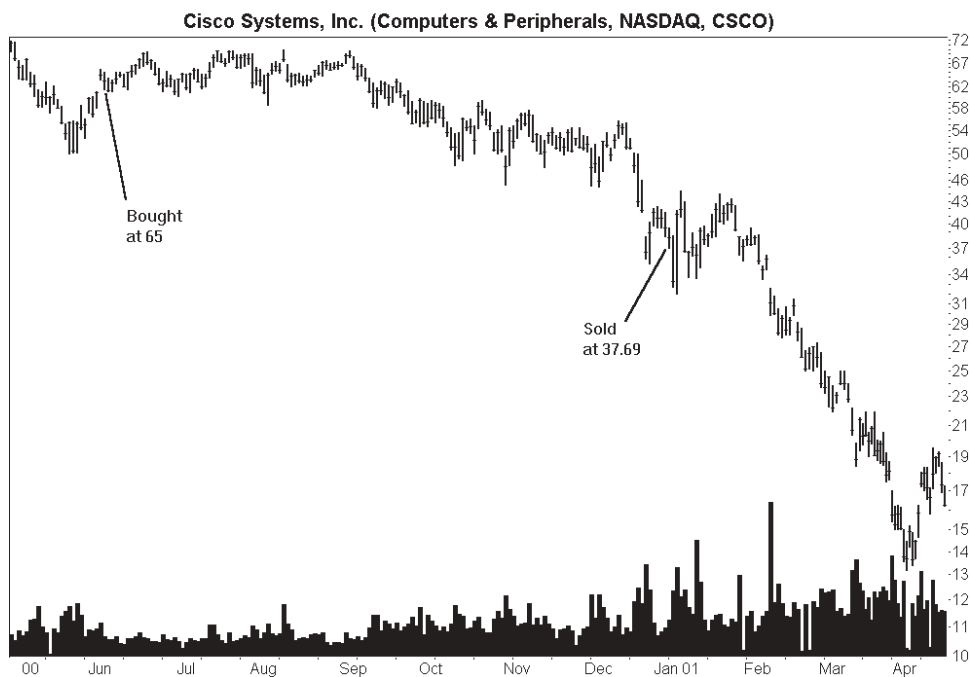
Figure I.1   Mary made a bullish bet on this trade, but failed to cut her losses. How could technical analysis have helped?

For about 2 weeks, it looked as if she was right. Prices climbed from 65 to a high of 69.56, then bounced between 58 and 70 until September. After that, prices started sliding, slowly at first, but the new trend was clearly down. As Cisco dropped, it followed the Standard & Poor's 500 Index lower, almost in lockstep. Like a drain, the declining market acted as a siphon sucking Cisco lower. The Nasdaq Composite meanwhile, formed a double top—peaks in July and September—with prices confirming the chart pattern in early October. A bearish signal; it was time to pull the trigger.

Mary knew none of this; all she cared about was the falling stock price. Why not sell? Good question. Listening to Mary discuss her trades, you can imagine the mental trading blocks building like ants reconstructing a mound after a rain storm. Phrases such as, "As soon as I sell, prices will rise," and "It has been dropping for so long that it must be near bottom," and "As soon as I break even, I will sell," and, my personal favorite, "I have decided to hold it for the long term," became part of the lexicon, the justification for holding onto a losing position.

On December 29, Mary sold the stock. Her reason? "I was sick of taking losses." She received a fill at 37.69, for a tidy 42% loss. The good news, if you can call it that, is that she got out when she did. She could have ridden the stock to its low of 13.19, a massive 80% decline. Still, a 42% loss is not what most would call "cutting your losses short."

A BETTER WAY

What about my trade? Those who know me understand that I like chart patterns and trade them often. For me, they make it easy to time the market—something the experts claim is impossible to do profitably for any length of time. You should get used to it, though, because every time you trade, you *are* timing the market whether you want to admit it or not.

During bear markets, bullish chart patterns are like budding flowers in winter: a rare sight. As soon as the market turns, it is as if spring arrives and the head-and-shoulders bottoms, the double bottoms, and other bullish patterns sprout forth and start blooming. The trick is that some of the patterns are weeds and some are orchids; distinguishing them is the subject of this book. I get to that later.

In the meantime, let us return to the Cisco situation. Figure I.2 shows what I saw when I looked at the same chart Mary did (but the time scale is shifted somewhat—the June to December periods overlap). The precise name for this chart pattern is a broadening formation, right-angled and descending. It sports a flat top, a down-sloping trend along the minor lows, and a volume pattern that can best be described as irregular. This pattern is as rare as finding water in a desert.
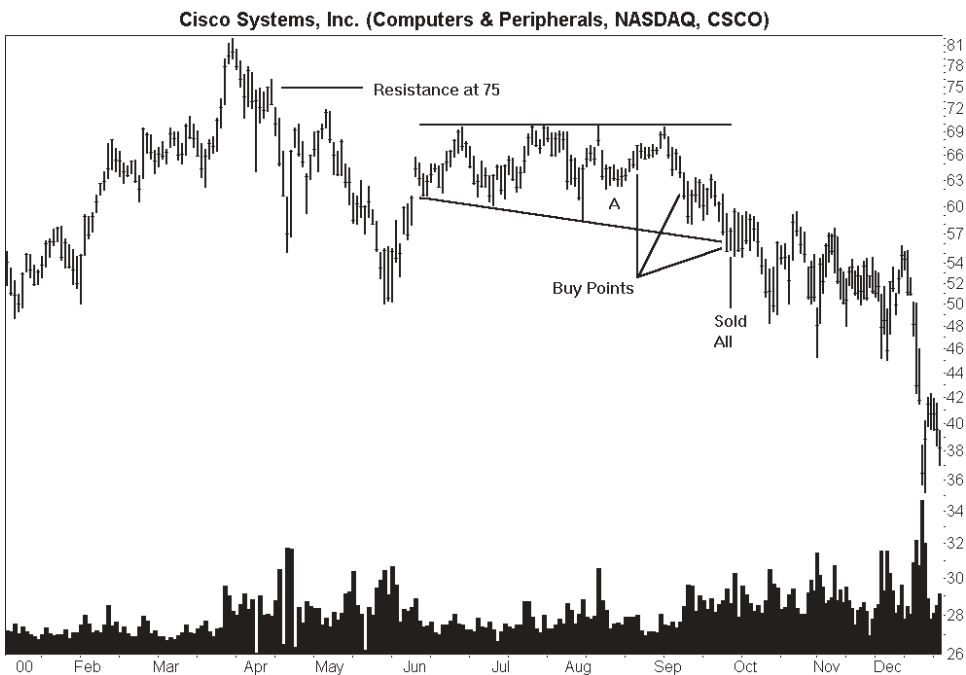
Figure I.2 A right-angled, descending, broadening formation with a partial decline (point A). Prices failed to break out upward, as predicted, dooming the trade.

A computerized notebook chronicles my trading experience, so I can watch for bad habits forming and learn from past mistakes. Here is what I wrote for the first purchase: "8/23/00. I bought 300 shares at the market and received a fill at 65.97. I expect the last hour rush to push this up even more [I was right. The stock closed at 67.19, which was 6 cents below the daily high]. Why buy? Partial decline in a broadening formation, right-angled and descending. The stock will pause briefly at 70 then zoom up to 75 and on to 80. I expect help from the Nasdaq Composite that broke out downward from an ascending broadening wedge, pulled back, and should continue higher. Downside is 61.88, where I must sell."

The key is the mention of a partial decline, and it appears at point A in Figure I.2. Prices touch the top trendline then head lower—but do not touch the lower trendline—curl around, and, usually stage an immediate, upward breakout. If things worked out as expected, the stock would have climbed to the resistance area at 75, burned its way through, then paused near the old high of 82. My guess is that it would stop at the round number 80, a common resistance point, then retrace some of its gains, curve around, and form a second top (for a double-top pattern). The trick would be to sell near the top.

None of that happened. After tagging the top trendline, prices moved lower in a stair-step decline.

Here is the next notebook entry: "Saturday 9/9/00. Trend channels suggest the stock should drop to about 62 (from the current 64) then rise. Prices touch an up trendline drawn from the June 30 low to the present, ignoring the two down spikes on August 2–3, suggesting a rebound Monday. Stop is still 61.88. The Nasdaq Composite looks as if it double topped, pierced an up trendline, and now appears to be heading down. With September here and October to follow, this might not be a good time to buy. For this stock, the best days to buy are Tuesday and Wednesday [based on linking price changes to days of the week], so I'm going to delay buying."

The general market was now declining—never a good sign when you own a stock. As with many trades, the technical evidence was mixed, but there were warning signs of trouble ahead. Instead: "9/11/00. I bought 200 at 61.25, shooting from the hip. I think that the stock will stop here, and it is a good buy-in price. Tomorrow will tell if I am right. Downside is 56–57, upside is 70, pause at 75 then upward to 80."

Whenever I write the words "shooting from the hip," it means the trade is about to go bad. These are the trades that *feel good*, *feel right*, but never are. Having recently reviewed my 20 years' worth of trades, I recognize this trading flaw, and now I know better (which is a good reason to keep a trading notebook: It gives you the ability to recognize a mistake when you make it again!). Notice how the stop-loss price magically changed from 61.88 to 56–57. A lowered stop is another warning of a trade gone bad.

"9/26/00. I bought 300 at the market open and received a fill at 58.16. Indicators were almost uniformly negative. Outside day [a chart pattern] with

the close near the lower end implies a lower low today. Right-angled broadening formation meant that I couldn't tell the breakout direction. Measured move down chart pattern from 69.63 to 58 then 63.63 to . . . 52. But did I listen? No. I bought anyway and the stock moved below the formation with bid/ask of 54.75–54.88, well below the stop price of 56."

Averaging down in a falling market is never a good idea, but it is a common mistake for novice investors and turkeys like me—ones who know better. After I bought, the stock closed outside the chart pattern, signaling a downward breakout. Even though I made a host of mistakes in this trade, at least I got one thing right: "9/27/00. I sold all 800 shares this morning as the stock had breached the lower trendline boundary of a descending right-angled broadening formation. Lessons on this trade: If an upside breakout from a partial decline does not appear immediately, sell. Do not buy more as the stock moves to the other side of the formation. I received a fill at 56.13, about a point higher than yesterday's close."

THE CHART PATTERN SCORING SYSTEM

Mary lost 42% and I lost 9%. Which investor would you rather be? The answer is, of course, neither.

In this book I describe a chart pattern scoring system—not a trading system—one that helps you pick better performing chart patterns to trade. How you trade the chart pattern is up to you. Use technical indicators, use fundamental analysis, use whatever method floats your boat. Just keep an eye out for the shoals.

How does the system work? Imagine that you are a farmer growing cucumbers. One day you discover that dark green plants yield the most cukes, so you keep the seeds from those plants. The next year, you plant again and find that production doubles. More research tells you how much fertilizer to use and how often to water, and that prickly cukes make good dills but lousy slicers. Through research you find the traits that make your farm more productive, more successful, magically growing cucumbers into watermelon-sized treats.

That analogy is what the scoring system does for chart patterns. I looked at the most popular and common chart patterns and found the traits that make them tick. Take double bottoms. There are four distinct varieties and each performs differently, but they all share common traits. Begin with the trend start. Where does the price trend leading to the chart pattern begin? I show you how to find the answer to that question. From the trend start, measure the time to the chart pattern then score your results with those shown in the appropriate table. Quickly run through other tables in the chapter and total the scores. Scores above zero mean the chart pattern is likely to beat the median. Scores below zero mean you are probably looking at a weed, a dog, a nonperformer.

I use this method in my stock trading and it works. Make no mistake, you are dealing with probabilities here, so even a chart pattern with the highest positive score can turn out to be a loser. Toss in some trading mistakes and anyone can turn a 50% gain into a losing situation by holding too long. That possibility is why the first part of this book covers the basics: trendlines, support and resistance, beta-adjusted trailing stops (and other stops), and common trading mistakes. Then follows the good stuff: A reference section on the most popular and commonly occurring chart patterns with a scoring system that helps separate promising chart patterns from the also-rans—all backed up by statistical research in easy-to-understand and easy-to-use tables.

So, if you invest in stocks, you can benefit from this book. Even if you do not believe in chart patterns, that will not make them go away, that will not cause them to stop working. There are many sharpshooters out there taking positions opposite your trade. Sometimes having an edge is all you need to keep from being hit. This book gives you that edge.

PART ONE
Getting Started

If you are an investor new to technical analysis, the following pages discuss critically important topics, ones you need to understand before spending any money trading securities. Become familiar with trendlines, stop-loss orders, and common trading mistakes and learn how to identify support and resistance levels before you trade.

For the experienced trader, statistics and ideas are presented that will be new to you. Incorporate them into your trading style as you see fit.

1

Down Trendlines

"If I've told you once, I've told you a thousand times. Don't exaggerate!" Is that an old saying I just made up? No, but it makes a good point. Much has been written about trendlines, all spreading the same gossip but no proof. This chapter examines common trendline traits and provides performance proof.

There are two types of trendlines that investors really care about: those that trend upward and those that trend downward (the last being horizontal, a sign of a trading range). This chapter considers down trendlines. Before discussing trendlines, I must first discuss the tools I use to construct a trendline.

TOOLS: ARITHMETIC AND LOGARITHMIC SCALES

Figures 1.1 and 1.2 show the same data series plotted over the same price and time limits with a down trendline drawn along the same end points. Why does the first trendline appear straight and the second curved? At first you might think of easing up on your medication, but your eyes are not deceiving you. Look at the scale on the right side of the figures. Figure 1.1 uses a logarithmic scale, whereas Figure 1.2 uses an arithmetic scale. The log scale plots points on a percentage basis. A 10-point move from 10 to 20 is a 100% gain, but a 10-point rise from 20 to 30 is a 50% gain. On a log scale, the rise from 10 to 20 appears larger than the rise from 20 to 30. On the arithmetic scale, the distance between 10, 20, and 30 remains the same.

What this means is that a straight line drawn on a log scale appears curved on an arithmetic scale. The reverse is also true: A straight line drawn on an arithmetic scale appears curved on a log scale.

Which scale should you use? Many serious investors use the log scale, and I include myself in this group. When you view an Internet stock in which the
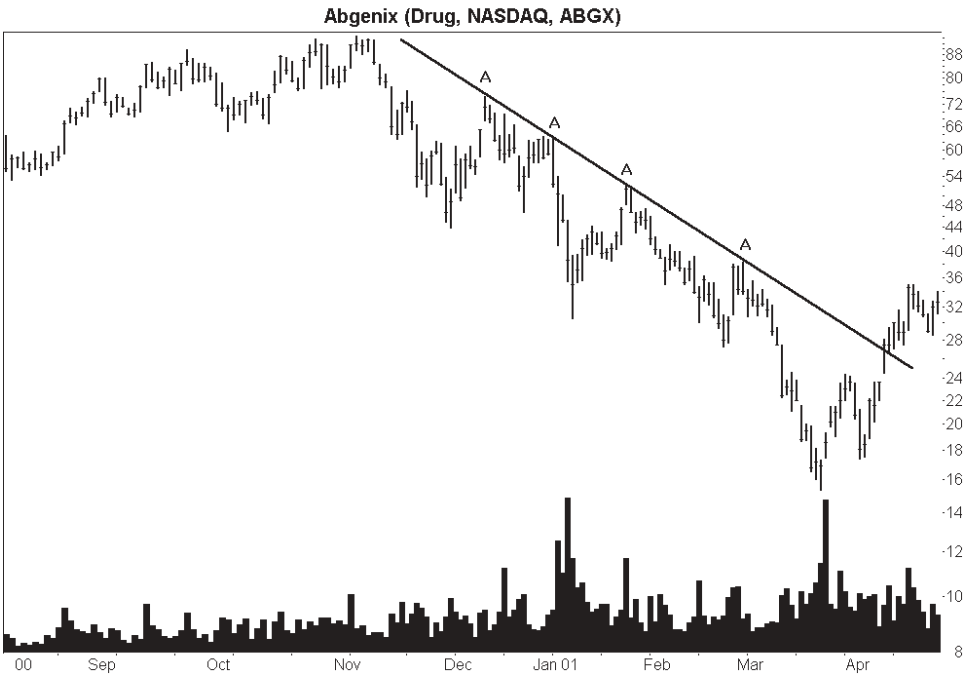
Figure 1.1 A down trendline on a semilogarithmic chart. The line is straight. Points labeled A show a few, but not all, of the minor highs.
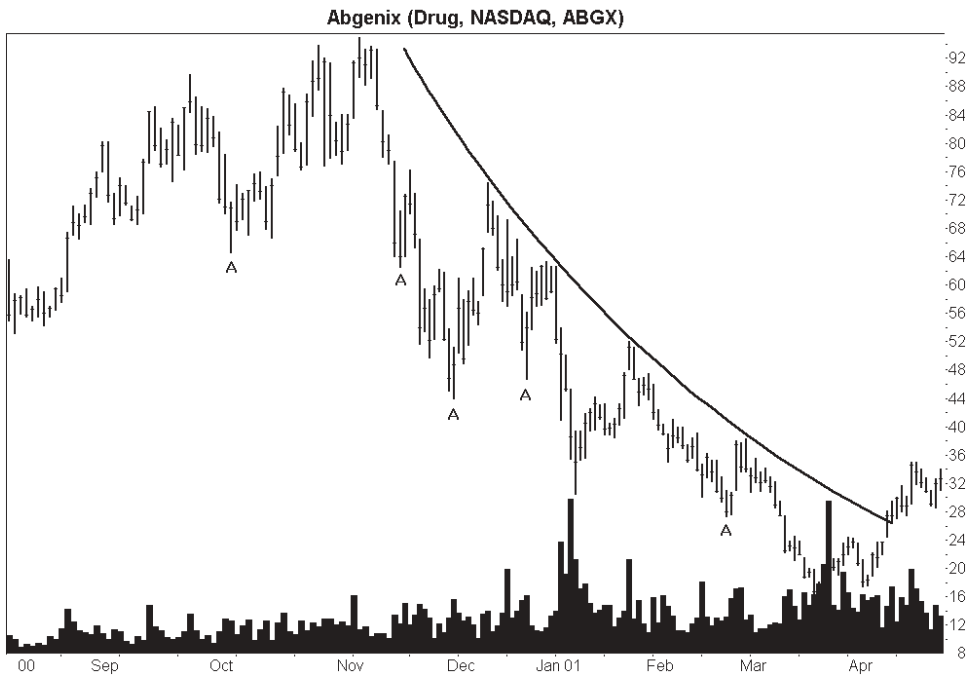

Figure 1.2 The same line on an arithmetic scale. The line is now curved. The label A shows some of the many minor lows.

price has zoomed from 2 to 200, or more recently from 200 to 2, any chart patterns in the low ranges on the arithmetic scale appear squished—flat lines—as if the stock has lost its pulse. On the log scale, the chart patterns are clearly visible, which is the major reason I switched from arithmetic to semilog charts (semilog means one axis uses the log scale, the other uses arithmetic).

MINOR HIGHS AND MINOR LOWS

Figure 1.1 also shows a few minor highs marked with the label A. A minor high is a small price peak where prices decline on either side of the peak for several days or even weeks. Minor highs are small turning points in the price trend. You can think of a minor high as the top of a foothill in a mountain range. When I mention finding the lowest minor high, think of standing in a valley looking for the top of the closest hill.

Figure 1.2 shows what minor lows look like. A minor low is just like a minor high only upside down. Prices decline, reach bottom, then climb, leaving a trough or depression on the price chart. Minor lows are also small turning points in the price trend. Think of minor lows as the small valleys between mountains. When I tell you to find the highest minor low, think of standing on the tallest peak looking for the closest valley.

THE TYPICAL PATTERN

Consider Figure 1.1 as a typical down trendline. I generally begin drawing a trendline from the highest high on the chart to the point of interest, making sure that the line skirts, but does not pierce, as many minor highs as possible. In this chapter I used only those trendlines with at least three touches (minor highs).

You can use any time scale you wish and either arithmetic or log scales. I often switch to the weekly scale and draw a long-term trendline along the peaks, looking to see where rising prices may intersect the trendline.

The trendline pictured in Figure 1.1 shows four touches, all minor highs, with prices staging a breakout in April when prices close above the trendline. Notice that I did not include the highest high in the figure. Some will complain about that, but I think the trendline looks fine. Later I discuss the 1–2–3 trend change method that relies on the highest high as the starting point.

INTERNAL TRENDLINES AND TAILS

Figure 1.3 shows an internal trendline. An internal trendline connects the price clusters—the flat tops of the consolidation regions—not the highest price in the minor highs. Look at point A. The trendline nears or touches the tops of
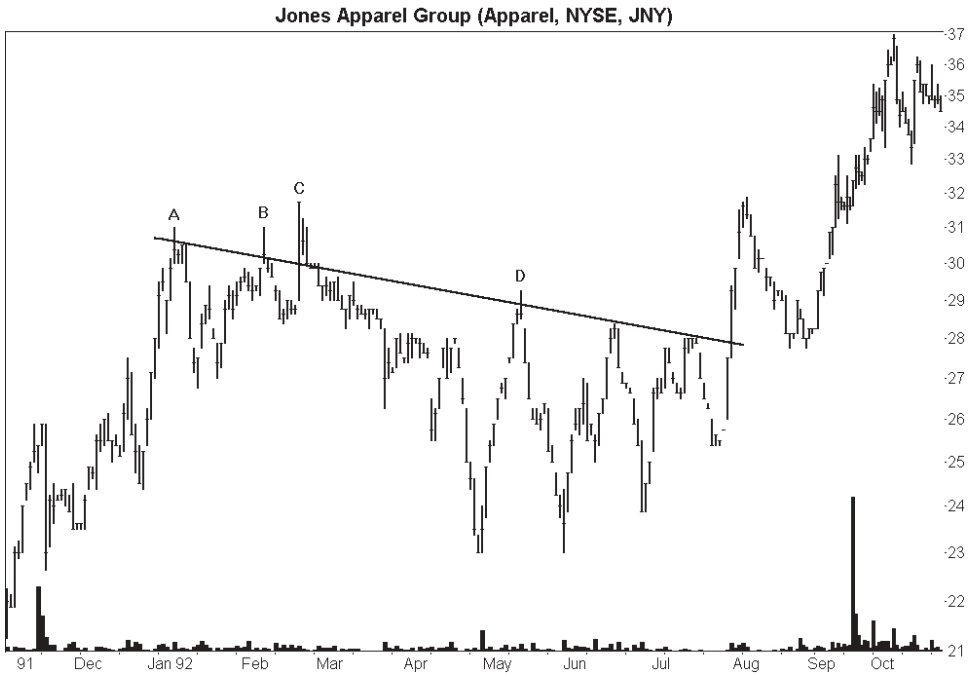
Figure 1.3 Internal trendline and tails A, B, C, and D. This trendline connects the congestion areas, not the minor highs, to show the trend.

prices surrounding the point, while the point itself is the highest high in the minor high.

Why use internal trendlines? Some chartists argue that internal trendlines better represent the trading behavior of the masses. The tails—those 1-day price spikes that look like one-day reversals; points A, B, C, and D in the figure—represent turning points and short-term trading opportunities. Most of the price action takes place at the congestion area, not at the top of the tail.

Sometimes it is necessary to draw internal trendlines because the minor highs do not quite line up. The trendline may pierce the price spikes but skirt the remainder of the tops. When necessary, that is how I draw my trendlines. I usually avoid drawing internal trendlines, but that is just a personal preference. I did not include internal trendlines for the statistics in this chapter.

POINTS AND TOUCHES

If you read the available literature about point spacing and trendline touches, the authors say that point spacing is important and the more touches a trendline has the more *significant* it becomes. I have no idea what that means. Does *significant* mean that a breakout from a trendline with three touches declines less than a five-touch trendline? The authors do not say.

Before I review the statistics, let me say that there is no right or wrong point spacing or touch count. You may find a high number of touches in a short trendline but a small number in a long trendline. The touches may be clustered in the first 3 months, then another touch will occur 6 months later with a breakout soon following. With point spacing and touch count, there are no set rules, so practice drawing trendlines and use the examples in this chapter for guidance.

Table 1.1 shows the results when I evaluated trendlines for point spacing and trendline touches. I went through 82 stocks and drew 210 trendlines sloping downward (I wanted to have at least 200 to work with, but any more than that and carpal tunnel syndrome would be a real possibility).

First, point spacing: Do trendline touches spaced close together work better than those spaced farther apart? No. Wide spacing works better. To answer the question, I found the average spacing from the first trendline touch to the last and looked at the resulting price performance after the breakout. I separated narrow spacing from wide spacing by using the median value. That is, I sorted the database and chose the midrange value, 29 days, such that half the samples were below the median and half were above it.

For those trendlines with point spacing less than 29 days, prices showed gains averaging 36%. When the point spacing was more than 29 days, the gains averaged 41%. That difference is substantial. Let me give you an example. Figure 1.1 shows a trendline with four minor high touch points and a trendline length of 79 days, measured from the first touch, 12/11/2000, to the last, 2/28/2001. I did not use the entire trendline length (that is, I did not include the breakout point), just the length from the first touch to the last minor high touch. Thus, the trendline has an average point spacing of 79/4 or 20 days.

Table 1.1
Performance Sorted by Trendline Spacing and Touches

Trendline Description	Result	Score
Narrow spacing (less than 29 days)	36% (105)	−1
Wide spacing (more than 29 days)	41% (105)	+1
Three touches	33% (85)	
Four touches	38% (63)	
Five touches	57% (40)	
Six touches	23% (10)	
Seven touches	42% (10)	
Eight touches	42% (2)	
Four touches or less	35% (148)	−1
More than four touches	48% (62)	+1

Note: The number of samples appears in parentheses.

Are trendlines with a gazillion touches more significant than those with just three? Yes. I evaluated the price performance after an upward breakout, sorted by the number of touches, and the results appear in Table 1.1. For example, there were 85 trendlines with exactly three minor high touches. The average gain from those trendlines was 33%. For the 40 stocks with five touches, the gains averaged 57%. Trendlines with six or more touches had sample sizes too small to be worth considering (below 30), so do not be alarmed with the paltry 23% gain.

Finally, the average number of touches was just over four, so I separated the trendlines into those having more than four touches and those equal to four or less. Again, the more touches there are, the better the performance after the breakout. Those trendlines with four or fewer touches showed gains averaging 35%; trendlines with more than four touches showed gains of 48%.

Before I discuss trendline length, let me mention scores. Many of the tables in this chapter list score values associated with trendline behavior. For now, ignore them. I discuss trendline scoring later in this chapter.

TRENDLINE LENGTH

Have you heard the saying, "The longer the trendline, the more significant it is"? It turns out to be true. I sorted the trendline length, measured from the first point to the breakout, then chose the median value as the separator between short and long. For the down-sloping trendlines I looked at, the median was 139 days, very close to the 137 days I found for *up* trendlines.

As shown in Table 1.2, those trendlines shorter than 139 days had gains, after the breakout, averaging 33%; this compares to a 43% gain for trendlines longer than 139 days. Not only is that result a significant difference, it is also statistically significant, meaning that it is not likely due to chance.

Separating the trendline lengths into more common categories—short term (up to 3 months), intermediate term (3 to 6 months), and long term (over 6

Table 1.2
Performance Sorted by Trendline Length

Trendline Description	Result	Score
Short trendlines (less than 139 days)	33% (104)	−1
Long trendlines (more than 139 days)	43% (104)	+1
Short-term trendlines (0 to 3 months)	34% (56)	
Intermediate-term trendlines (3 to 6 months)	35% (82)	
Long-term trendlines (more than 6 months)	46% (72)	
Really long trendlines (more than 1 year)	52% (23)	

Note: The number of samples appears in parentheses.