I estimated that a support zone had formed at 11.75, so I placed a stop at 11.63. Prices had stopped at this level just before the chart pattern formed and again just before the December breakout. A better stop would have been just below the lower rectangle trend line because both trend lines act as support or resistance zones. However, I did not want to take such a large loss (15%+).

Even paper trades go wrong and that is what happened here. A day after buying the stock, prices returned to the rectangle formation to do more work. Prices slowly, agonizingly, moved lower until hitting my stop in late December. I took a paper loss of 11%. After a second upward breakout, price continued rounding over, then dropped, and finally hit bottom at 8.88 in March 1999 before recovering to 16 and change.

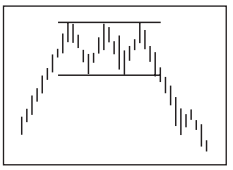
For Best Performance

The following list includes tips and observations to help select RBs that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 37.1.
- Trade with the prevailing market trend: go long in a bull market and short a bear market. Avoid countertrend trades—Table 37.2.
- Rectangles in bear markets with downward breakouts have the lowest failure rates for declines up to 10%. After that, rectangles in bull markets with upward breakouts do better—Table 37.3.
- Select rectangles with upward breakouts in the middle of the yearly trading range; downward breakouts near the yearly low—Table 37.4.
- Throwbacks and pullbacks hurt performance, so look for overhead resistance or underlying support before trading—Table 37.4.
- About half the rectangles with downward breakouts reach the ultimate low within 3 weeks. Watch your short trade carefully. Upward breakouts take longer to top out, so be patient—Table 37.5.
- Select tall and wide patterns—Table 37.6.
- Choose most rectangles with a rising volume trend and heavy breakout volume—Table 37.7.
- Use a partial rise or decline to predict the breakout direction—Table 37.8.

38

Rectangle Tops



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Prices trend up to the formation and then oscillate between two horizontal trend lines before breaking out upward.	
Reversal or continuation	Short-term bullish continuation	
	Bull Market	**Bear Market**
Performance rank	12 out of 23	19 out of 19
Break-even failure rate	9%	16%
Average rise	39%	20%
Change after trend ends	–30%	–38%
Volume trend	Downward	Downward
Throwbacks	64%	71%
Percentage meeting price target	80%	60%
Surprising findings	Throwbacks and gaps hurt performance. Tall or wide patterns perform better than short or narrow ones. Patterns with a falling volume trend do well, and heavy breakout volume propels prices farther. A partial decline predicts the upward breakout direction but performance suffers.	
See also	Flags; Measured Move Up; Rectangle Bottoms	

Downward Breakouts

Appearance	Same, but breakout is downward.	
Reversal or continuation	Short-term bearish reversal	
	Bull Market	**Bear Market**
Performance rank	6 out of 21	16 out of 21
Break-even failure rate	11%	9%
Average decline	17%	21%
Change after trend ends	57%	45%
Volume trend	Downward	Downward
Pullbacks	58%	65%
Percentage meeting price target	63%	63%
Surprising findings	Pullbacks hurt performance. Tall patterns perform better than short ones. Performance improves after a partial rise. Rectangles with a pre-formation drop outperform.	
See also	Same as for upward breakouts	

If you think of a rectangle as a horizontal consolidation region or a flat base from which prices make a large move, then rectangles are easier to identify and the statistics more meaningful. Rectangle tops (RTs) are solid performers in bull markets as the Results Snapshot shows. The failure rates are lowest and performance is best when prices move in the direction of the prevailing market trend: upward in a bull market and downward in a bear market. Countertrend moves suffer.

The surprising findings are not surprising at all, as other chart pattern types share many of the same ones. However, rectangles have features unique to few other patterns: pre-formation rises and declines, and partial rises and declines. A pre-formation rise or decline is when price bumps up or down just before the rectangle starts. A partial rise or decline comes at the end of the rectangle and it reliably signals the breakout direction. More about these features in the Statistics section of this chapter.

Tour

Figure 38.1 shows an example of a rectangle top. Prices begin their upward trek in June 1992 at 14 and reach the rectangle in May of the following year. Then prices consolidate for over a month, bouncing between overhead resistance at 24.63 and support at 23.63. A trend line drawn across the minor highs

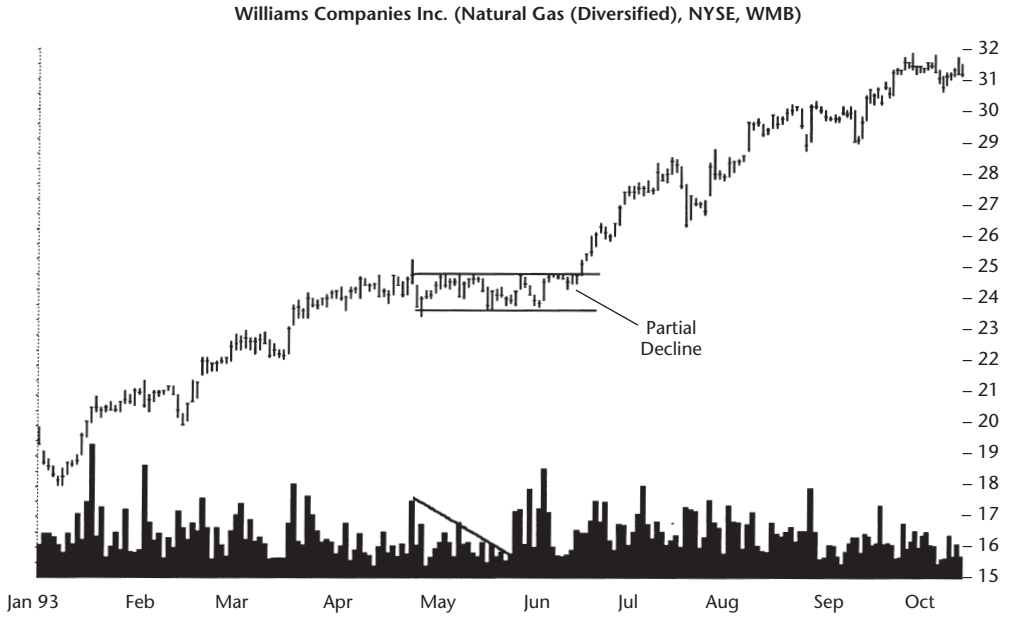


Figure 38.1 Rectangle top with an upward breakout performs well in this uptrend.

is horizontal as is the one connecting the minor lows. There are a number of touches of both trend lines suggesting a reliable formation. At the start, prices overshoot both up and down by peeking outside the two trend lines. This movement is not a problem because it occurs too early in the chart pattern before it can be recognized as a rectangle.

The volume pattern begins in the typical manner—receding. However, about two-thirds of the way to the breakout, the pattern changes. Volume gets heavier as if building pressure for the upcoming release. Then, mysteriously, volume subsides as prices move horizontally just below the top trend line for over a week. When prices pierce the top trend line, volume picks up but not remarkably so. Volume just builds on the expanding trend that is developing since prices began sliding along the trend line top.

Prices climb away cleanly. There is a slight, 3-day dip in late June when it looks as if prices are trying to throw back to the formation top, but the buying pressure is just too strong. The retrace stops and prices turn around and continue moving up.

Why do rectangles form? A rectangle chart pattern is a struggle between the haves and the have-nots. Those that own the stock but want to sell have identified a price at which they are willing to part with their shares. When the price reaches that level, they sell, forcing the price down. When prices fall, they quit dumping the stock. On the other side is another group of investors who want to acquire the stock. They place buy orders at what they perceive to be the fair value. When price falls to their target, the buy orders overwhelm

supply and the price rises. If this up–down struggle goes on long enough, price bounces between one extreme and the other. Over time, you can draw a horizontal trend line along the peaks and another along the valleys as a rectangle formation takes shape. Eventually, one of the sides runs out of ammunition. If the people selling their shares run out first, buying demand overwhelms supply and the price pierces the top trend line. If the buyers spend all their money and back away from the table, prices drop through the bottom of the rectangle. In either case, the shares continue in the breakout direction because of growing demand (the price moves upward) or increasing supply (the price tumbles).

Identification Guidelines

Table 38.1 shows identification guidelines for rectangle tops.

Rising price trend. Over the short to intermediate term, the price trend should be leading up to the formation. This upward trend is what distinguishes the formation from rectangle bottoms. The distinction is arbitrary; I wanted to see if there is any difference in the way the two perform.

Horizontal trend lines. As a rectangle forms, prices rise to a resistance level and fall back to a support area for another try. If this pattern continues, the minor highs can be joined with a trend line drawn along the top of the formation, and another trend line can be drawn below the minor lows. The two trend lines are horizontal or nearly so. If there is a slight tilt to the trend line, do not worry as long as it does not disturb the overall appearance of a congestion region.

Touches. To qualify as a rectangle, prices must touch each trend line at least twice. The touches need not alternate from one trend line to the other, but the minor highs and lows must be distinct. You do not want to see two touches along the top as part of the same minor high. Instead, look for two distinct hills and two valleys at a minimum.

Volume. The volume trend varies from formation to formation but usually recedes. Many of the charts accompanying this chapter show such a trend.

Table 38.1
Identification Characteristics

Characteristic	Discussion
Rising price trend	The short- to intermediate-term price trend leading to the formation should be up.
Horizontal trend lines	Two horizontal (or nearly so) trend lines outline the price action, one above the minor highs and one below the minor lows.
Touches	There should be at least two touches of each trend line (at least four touches total).
Volume	Volume usually recedes until the breakout.

Figure 38.2 A rectangle top with receding volume trend. Although most rectangles exhibit receding volume, do not automatically exclude those with rising volume. Three profitable trading opportunities are marked where prices cross from one side to the other.

Figure 38.2 shows what a rectangle top looks like. Prices are trending up leading to the rectangle. Then they bounce between support at 54 and overhead resistance at 59.50. The wide, tall rectangle has plenty of trend-line touches. If you are lucky, you might be able to get three or four trades from this formation (as marked by the numbers on the figure). Each side-to-side pass represents a price change of about $5, plenty of profit opportunity to be of interest to swing traders.

The volume pattern trends downward over the formation. Near the end, the volume spurts upward propelling prices higher until they break out and zoom to new highs. Statistics suggest that the majority of rectangles have receding volume trends. I would not exclude a rectangle formation simply because the volume trend is rising.

Focus on Failures

Of the nearly 700 rectangles I reviewed, about 11% fail. Figure 38.3 shows an example of a failure. Prices break out of the formation at 35.63 and move upward to a new high of 37. However, they stall in mid-April before turning around and throwing back to the formation. Once prices choose a new direction, they head down at a good clip. The brief climb represents a 4% price

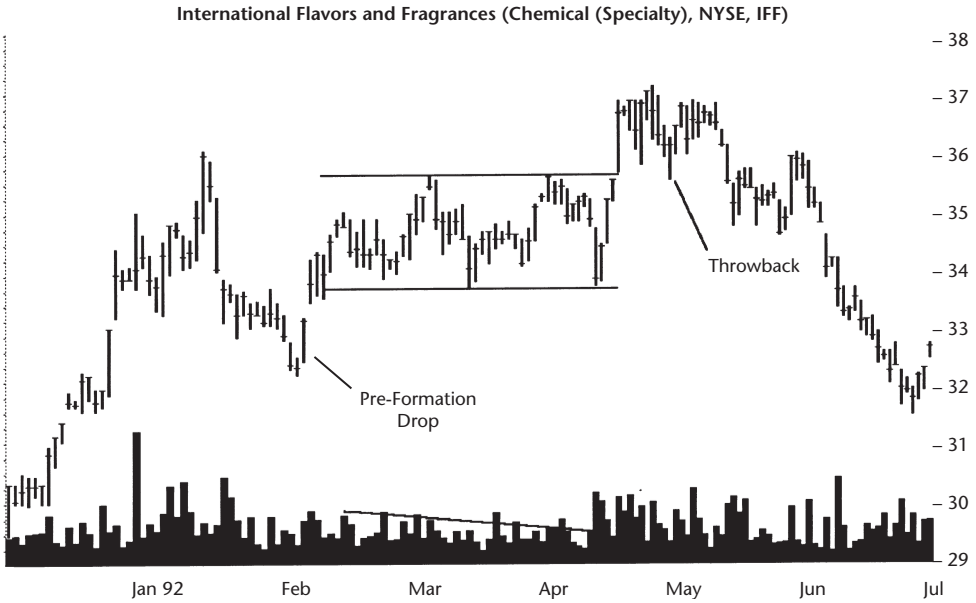


Figure 38.3 A 5% failure of a rectangle top. Prices follow the existing trend upward but only for a little gain before heading back into the rectangle and shooting out the other side.

change. I consider anything less than a 5% move in the breakout direction to be a failure. The failure confirms when prices close beyond the side opposite the breakout.

I flag 5% failures because I want a method to catalog poorly performing chart patterns. Look at this another way: Had you bought this stock when it left the rectangle top, you would be upset when it throws back to the formation and continues lower. You might even take a loss if you are not quick on the trigger.

Statistics

Table 38.2 shows general statistics for RTs.

Number of formations. I pounded on the keyboard and maneuvered the mouse until I found more than three times the number of rectangles than I had for the first edition of this book. Nearly half came from a bull market with upward breakouts. The 676 patterns I found were from mid-1991 to mid-1996 and from 2000 to 2003, in about 500 stocks. Several stocks did not cover the entire 2000 to 2003 range.

Reversal or continuation. Since we are dealing with tops, an upward breakout from a rectangle acts as a continuation of the trend, while a downward breakout is a reversal, by definition.

Average rise or decline. The average rise or decline tracks the market trend. When the market is moving upward strongly, as in a bull market for rec-

Table 38.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	331	129	136	80
Reversal (R), continuation (C)	331 C	129 C	136 R	80 R
Average rise or decline	39%	20%	–17%	–21%
Rises or declines over 45%	112 or 34%	14 or 11%	3 or 2%	3 or 4%
Change after trend ends	–30%	–33%	57%	45%
Busted pattern performance	43%[a]	34%[a]	–20%[a]	–29%[a]
Standard & Poor's 500 change	14%	–3%	0%	–12%
Days to ultimate high or low	170	75	56	40

Note: Minus sign means decline.

[a]Fewer than 30 samples.

tangles with upward breakouts, the average rise is large: 39%. The same applies to downward breakouts and falling markets. Rectangles in a bear market have postbreakout losses averaging 21%.

Rises or declines over 45%. A third of the rectangles with upward breakouts in a bull market rise over 45% after the breakout. No other combination of breakouts and market conditions comes close. The worst performers are RTs with downward breakouts: Less than 4% show declines over 45% after the breakout.

Change after trend ends. Once price changes trend after reaching the ultimate high or low, the move can be severe, as Table 38.2 shows. For example, after price reaches the ultimate low (a downward breakout), the rise in a bull market from a rectangle averages 57%. Consequently, if you maintain a short position too long, you may lose a significant amount of money. The results are a warning about the buy-and-hold strategy. If you are willing to part with half your winnings, then ignore the stock movement over time. Otherwise, use stop-loss orders to protect profits.

Busted pattern performance. Busted RTs are poor performers, as Table 38.2 shows. The numbers are even worse if you wait for a confirmed breakout (a close outside the trend line) in the direction opposite the original breakout.

Standard & Poor's 500 change. You can see the influence of the general bullish or bearish market on the average rise or decline. When the market trend agreed with the breakout direction, performance improved. Countertrend breakouts suffered.

Days to ultimate high or low. It takes nearly 6 months in a bull market for price to climb 39%, but in a bear market a decline of 21% takes only 40

days when it should take 88 (if the slope were the same as in a bull market). Thus, the bear market has declines that are steeper than the rise in a bull market. If you are like me and do not like to short, that means staying out of a bear market. Cash is king.

Table 38.3 shows failure rates for RTs as a frequency distribution of gains or losses. For example, 9% of RTs with upward breakouts in a bull market climb less than 5%. A third will fail to rise more than 20%. Half will top out after rising less than 35%. Bear market, downward breakout patterns show a similar trend.

Those two scenarios show the lowest failure rates because they follow the market trend. Countertrend moves, bear market, up breakout and bull market, down breakout, have worse failure rates.

Notice how the failure rates start comparatively small and then climb rapidly. The worst offender comes from RTs with downward breakouts in a bull market. The rate climbs from 11% to 24% to 44% for declines of 5%, 10%, and 15%, respectively. You do not want to trade one of those, so stay away from rectangles with breakouts that go against the prevailing market trend.

Table 38.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. It does not take long for price to close above the rectangle top or below the rectangle bottom, signaling a breakout. The average is between 2 and 4 days.

Yearly position. Most RTs with upward breakouts appear within a third of the yearly high. Rectangles with downward breakouts congregate in the middle of the yearly trading range. I measured both from the breakout price (the upper trend line for upward breakouts and lower trend line for downward breakouts).

Table 38.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	30 or 9%	21 or 16%	15 or 11%	7 or 9%
10	62 or 19%	40 or 31%	33 or 24%	15 or 19%
15	85 or 25%	61 or 47%	60 or 44%	29 or 36%
20	111 or 34%	80 or 62%	91 or 67%	43 or 54%
25	132 or 40%	88 or 68%	106 or 78%	55 or 69%
30	154 or 47%	101 or 78%	114 or 84%	61 or 76%
35	176 or 53%	109 or 84%	124 or 91%	66 or 83%
50	225 or 68%	117 or 91%	133 or 98%	77 or 96%
75	270 or 82%	123 or 95%	136 or 100%	80 or 100%
Over 75	331 or 100%	129 or 100%	136 or 100%	80 or 100%

Table 38.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	3 days	3 days	4 days	4 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L4%, C19%, H77%	L6%, C20%, H73%	L24%, C43%, H33%	L23%, C46%, H31%
Percentage rise/decline for each 12-month lookback period	L51%[a], C38%, H40%	L34%[a], C21%[a], H19%	L20%, C15%, H17%	L22%[a], C18%, H25%[a]
Throwbacks/pullbacks	64%	71%	58%	65%
Average time to throwback/ pullback ends	9 days	9 days	8 days	9 days
Average rise/decline for patterns with throwback/pullback	37%	18%	15%	20%
Average rise/decline for patterns without throwback/pullback	44%	24%	19%	23%[a]
Performance with breakout gap	38%	16%[a]	17%[a]	19%[a]
Performance without breakout gap	40%	21%	17%	22%
Average gap size	$0.35	$0.23	$0.59	$1.75

[a]Fewer than 30 samples.

Yearly position, performance. Where do the best performing RTs reside? Most do best when the breakout is near the yearly low.

Throwbacks and pullbacks. Throws and pulls occur between 58% and 71% of the time, and it takes price about 9 days, on average, to return to the breakout price. When a throwback or pullback occurs, performance suffers. For example, rectangles with upward breakouts in a bull market show gains of 37% when a throwback occurs but rise 44% when one is absent. Think of this behavior as a study in momentum. A throwback or pullback interferes with breakout momentum and the resulting performance suffers.

Gaps. As Table 38.4 shows, most of the time performance improves without a gap. The sample counts are small, so results could change with additional samples.

Table 38.5 shows a frequency distribution of time to the ultimate high or low for RTs. Many of the rectangles reach the ultimate high or low in the first 2 weeks. For example, 46% (the sum of the first 2 weeks) of the rectangles in a bear market with a downward breakout bottom during that time. Just 15% have not found the ultimate low after 2.5 months.

Table 38.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	22%	11%	7%	5%	5%	3%	4%	2%	6%	5%	31%
Bull market, up breakout	11%	7%	5%	4%	5%	5%	2%	4%	2%	1%	56%
Bear market, down breakout	31%	15%	8%	9%	5%	4%	1%	9%	1%	3%	15%
Bull market, down breakout	23%	9%	6%	9%	6%	7%	6%	1%	4%	1%	29%

RTs in a bull market with upward breakouts take the longest to reach the ultimate high, but that news is old; we learned it from Table 38.2. Think of this table (38.5) as a finer representation of the earlier table. Table 38.5 shows the likelihood that your rectangle will top or bottom out in week 1, 2, 3, and so on.

Notice the slight uptick in week 4 for downward breakouts. Other moves in day 56 (bear market) and 42 (bull market) show RTs bottoming out during that time. Thus, if you still have an open short position during that time, be prepared for price to start rising. The numbers are small, but it pays to be prepared.

Table 38.6 shows statistics related to pattern size.

Height. Tall rectangles perform better than short ones. That is a significant finding when you think of a rectangle as a support or resistance zone. When you have a tall mass of prices winding up and down and the breakout from that congestion occurs, the resulting run might be worth betting on. Think of a rectangle as a tightened spring waiting to explode.

Width. Pattern width is a less reliable indicator of performance than height. Wide patterns perform better than narrow ones (using the median as the delimiter between short and long), except for rectangles in a bear market with a downward breakout. Narrow RTs perform better in that case, but the difference is slight.

Average formation length. The average rectangle length is quite stable across breakout directions and market conditions, ranging from 71 to 82 days.

Height and width combinations. Pop quiz: If tall RTs perform best, and wide RTs perform best, will rectangles that are both tall and wide perform best? No. It never ceases to surprise me when the obvious fails to occur. RTs that are both tall and *narrow* perform best except those in a bear market with an upward breakout.

Table 38.7 shows volume-related statistics for rectangle tops.

Volume trend. In most cases, rectangle tops show better performance after the breakout when volume was trending down within the rectangle. The exception is for rectangles with downward breakouts in a bull market. They do better with rising volume, but the results are close: 18% to 17%.

Table 38.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	46%	20%	18%	23%
Short pattern performance	35%	19%	16%	20%
Median height as a percentage of breakout price	10.59%	9.68%	10.09%	11.50%
Narrow pattern performance	38%	18%	16%	22%
Wide pattern performance	41%	22%	17%	21%
Median length	65 days	60 days	62 days	53 days
Average formation length	82 days	71 days	80 days	77 days
Short and narrow performance	35%	19%	15%	21%
Short and wide performance	36%	21%[a]	18%[a]	17%[a]
Tall and wide performance	44%	22%	17%	22%
Tall and narrow performance	49%	15%[a]	21%[a]	29%[a]

[a]Fewer than 30 samples.

Table 38.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	38%	19%	18%	20%[a]
Falling volume trend performance	40%	20%	17%	22%
U-shaped volume pattern performance	40%	20%	17%	24%
Dome-shaped volume pattern performance	36%	20%	18%	19%
Neither U-shaped nor dome-shaped volume pattern performance	49%	14%[a]	8%[a]	11%[a]
Heavy breakout volume performance	40%	20%	17%	20%
Light breakout volume performance	36%	17%[a]	17%	23%[a]

[a]Fewer than 30 samples.

Volume shapes. Most rectangles have U-shaped volume and in two cases, bull market, up breakout and bear market, down breakout, performance improves over dome-shaped volume. A random shape, which is neither U nor dome, performs exceedingly well in rectangles in a bull market with an upward breakout (49% rise). However, the sample count is not robust—35—compared to over a hundred each for the other shapes. Thus, do not depend on a rectangle with a random volume shape delivering outstanding performance.

Breakout volume. There always has to be a party pooper and rectangles with downward breakouts are it. They perform equal to or better on light volume, if you can trust the low sample count result. Upward breakouts do best when the breakout day volume is above the 30-day average.

Table 38.8 shows miscellaneous RT statistics.

Partial rise or decline. Figure 38.1 shows an example of what a partial decline looks like, in case you are unfamiliar with them. Consult the Glossary and Methodology chapter for more information and other examples of partial rises and declines.

A partial decline is more reliable in predicting the breakout direction than is a partial rise (89% versus 61% correct). In many cases, it may be difficult to determine when a partial rise or decline is happening because of the way prices

Table 38.8
Miscellaneous Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Partial decline correctly predicts upward breakout	151/170 or 89%		N/A	N/A
Partial rise correctly predicts downward breakout	N/A	N/A	87/143 or 61%	
Partial decline, performance	38%	15%	N/A	N/A
No partial decline, performance	40%	21%	N/A	N/A
Partial rise, performance	N/A	N/A	17%	23%
No partial rise, performance	N/A	N/A	16%	20%
Pre-formation rise, performance	38%[a]	21%[a]	16%[a]	27%[a]
No pre-formation rise, performance	40%	20%	17%	20%
Pre-formation drop, performance	45%	20%	19%	26%
No pre-formation drop, performance	34%	20%	15%	18%

Note: N/A means not applicable.

[a]Fewer than 30 samples.

fluctuate, but if you can identify them, they allow entry into a trade before the breakout. On average, your profits should be larger with lower risk providing you use stops to limit adverse moves. If price touches the horizontal rectangle trend line and reverses instead of breaking out, close out the trade immediately. Chances are prices are going to cross the rectangle to the other side.

When a partial *decline* occurs, performance suffers. That finding makes sense because the move is lower and it weakens upward momentum. However, when a partial *rise* occurs, performance improves, but not by much. I did not separate partial rise and decline performance into bull and bear markets.

Pre-formation rises or drops. A pre-formation rise (PR) or drop (PD) is what I call a quick up or down move before the rectangle starts. Figure 38.1 shows both; Figure 38.3 shows a PD.

Pre-formation rises have low sample counts and the results are all over the map. Sometimes a PR helps performance (in bear markets) and sometimes not (bull markets).

With pre-formation drops, the news is all good. When a PD occurs, performance either stays the same or, usually, improves, sometimes substantially. Why this is the case is a mystery to me, but if it changes a 34% rise into a 45% one, then it is worth paying attention to.

Trading Tactics

Table 38.9 explains trading tactics for rectangle tops.

Measure rule. The measure rule predicts the minimum target price. First, compute the height of the rectangle by subtracting the value of the lower trend line from the upper one. Add the difference to the top trend line for upward breakouts and subtract it from the bottom trend line for downward breakouts. The result is the target price.

For an example of the measure rule and how it applies to rectangles, consider the rectangle top pictured in Figure 38.4. The top trend line has a value of 38.75, whereas the bottom one perches at 33.75. The difference of 5 is the height of the rectangle. If this rectangle were to break out downward, then the target price would be 28.75, or the lower trend line value minus the formation height. Since the breakout is upward, add the height to the top trend line, giving a target price of 43.75. Prices reach the target about a month after the breakout.

I have read that to compute the *maximum* price move, one physically measures the *length* of the rectangle and applies it to the top trend line for upward breakouts or subtracts it from the bottom trend line for downward breakouts. When using my computer, the technique comes close to the ultimate high. On paper, the results are less accurate. I have not tested this method extensively and cannot vouch for its accuracy. However, one has to wonder how measuring a formation (in inches) can accurately translate into a price move; but, who knows, the system might work or at least prove helpful.

Table 38.9
Trading Tactics

Trading Tactic	Explanation
Measure rule	Measure the height of the rectangle from trend line to trend line. For upward breakouts, add the height to the top trend line; for downward breakouts, subtract it from the bottom trend line. The result is the minimum expected move. For a maximum price target, measure the *length* of the rectangle and extend it vertically above the top trend line (for upward breakouts) or below the bottom one (downward breakouts). The price becomes the maximum expected move.
Consolidation	More than two out of three rectangles act as consolidations of the prevailing trend. Expect the breakout to continue the trend.
Wait for breakout	Since you cannot be sure in which direction a rectangle will break out, wait for prices to close outside the trend line before trading in the direction of the breakout.
Tall rectangle scalp	If the rectangle is tall enough, sell or sell short near the top trend line and buy or cover near the bottom one.
Other	Watch for rectangles forming as the corrective phase of a measured move up formation and adjust the target price accordingly. Rectangle reversals sometimes appear as flat top formations.

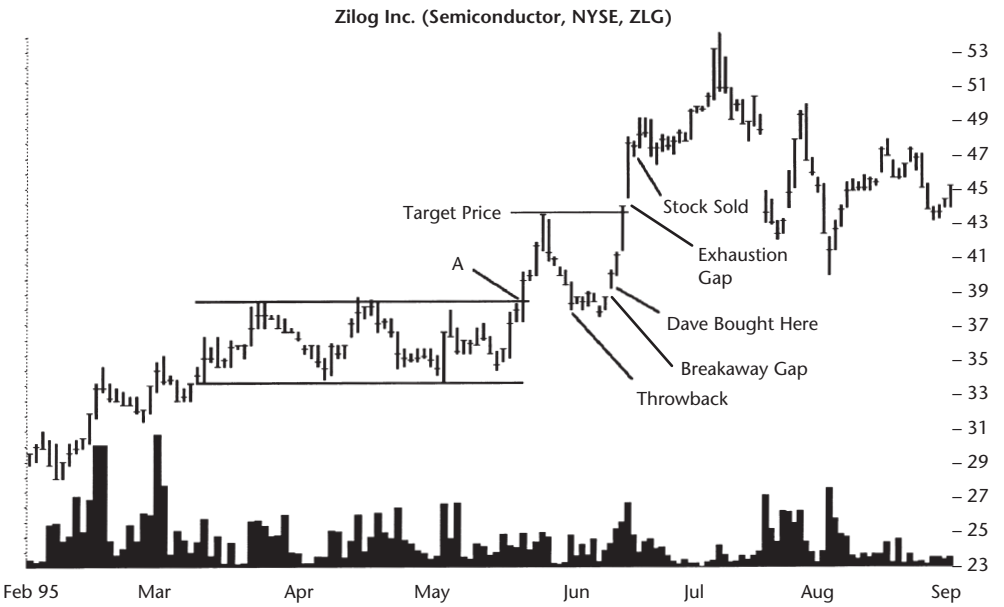


Figure 38.4 Rectangle top with breakaway gap and exhaustion gap. Dave traded this formation after buying it once the throwback completed.

Consolidation, breakout. Returning to Table 38.9, the breakout direction is usually in the direction of the prior trend. For Figure 38.4 the direction is upward and that is the direction in which the breakout occurs. Once price closes outside a formation, then a breakout (or premature breakout) occurs. If the breakout is upward, go long or cover your short. If the breakout is downward, then short the stock or sell your position.

Tall rectangle scalp. If the rectangle is tall enough and providing you discover it quickly enough, you can trade the formation as it swings from trend line to trend line. Short or sell at the top trend line and cover or buy at the bottom trend line. Keep an eye on the price trend leading to the formation in case a breakout occurs. If the stock moves outside the rectangle trend line and you are losing money, close out your position. You might also want to get on the bandwagon and trade in the direction of the new trend.

If the breakout turns into a premature breakout when prices return to the rectangle proper, do not panic. There is still a chance that prices will resume their original breakout direction. Again, if the trade goes against you by shooting out the other side of the rectangle, then close out your position and do it quickly. If you hesitate, you may have another opportunity to add to your position or close it out if the formation pulls back or throws back. Take advantage of it especially if you are losing money. Often, prices will return to the formation boundary and then turn away. If you do not get out during the pullback or throwback, then it is likely your losses will grow. Do not pass up the second chance and do not hope that prices will continue recovering. They will not!

Other. Before placing a trade in a rectangle formation, see if the chart pattern is part of a larger pattern. Sometimes, the rectangle is the horizontal part, called the corrective phase, of a measured move up formation. Knowing that a rectangle is a subpart of a measured move allows you to get a better gauge on the expected price move. When the rectangle top is a reversal of the prevailing price trend, the resulting formation resembles a flat top. Suspect that a reversal might be under way if the price trend leading up to the rectangle is unusually steep.

Sample Trade

Dave is an artist. It is tough making a living and he wants to move to the computer world and become a graphics artist. He has been playing around with some hardware and software that duplicate the feel of a brush on various textures but wants to get the latest versions.

Recognizing chart patterns comes easily to him. With his keen eye, he has been on the prowl for a lucrative stock play. That is one reason he stumbled across the rectangle shown in Figure 38.4, but he did not spot the rectangle in a timely fashion. The only reason he noticed it is because of the throwback. Throwbacks and pullbacks are peculiar enough with their hooking retrace that they are easy to spot. One has only to look back and identify the associated formation.

Dave computed the formation height and applied it to the top of the rectangle to get the expected minimum price move. Did he pull the trigger when prices threw back to the formation? No, he waited. He followed the stock closely and when it gapped up (a breakaway gap), he bought and received a fill at 40. Each day the stock moved higher and in 3 days it had reached the target price of 43.75. The day after that the stock gapped again (exhaustion gap) signaling an impending end to the rise. The day after that, prices faltered, and that is when he sold and closed out his position at 47.50. He netted over $7 a share or 18% in less than a week.

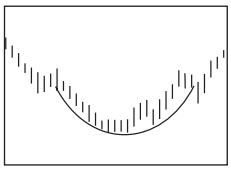
For Best Performance

The following list includes tips and observations to help you select better performing RTs. Refer to the associated table for more information.

- Correctly identify the pattern using the guidelines—Table 38.1.
- Trade rectangles with the prevailing market trend: upward breakouts in a bull market, downward breakouts in a bear market—Table 38.2.
- Select rectangles with breakouts in line with the market trend (upward breakouts in bull markets or downward breakouts in bear markets) as they have the lowest failure rates—Table 38.3.
- Choose rectangles with breakouts near the yearly low—Table 38.4.
- Avoid throwbacks and pullbacks as they hurt performance—Table 38.4.
- Avoid rectangles with breakout day gaps—Table 38.4.
- In bear markets, be prepared take profits quickly, but let profits collect in a bull market. For downward breakouts, look for price strength in weeks 4, 6, and 8—Table 38.5.
- Select tall or wide rectangles—Table 38.6.
- Pick rectangles with upward breakouts and a falling volume trend—Table 38.7.
- Choose rectangles with heavy breakout volume (upward breakouts)—Table 38.7.
- Partial declines correctly predict the breakout direction but performance suffers—Table 38.8.
- Partial rises help predict the breakout direction and performance improves, too—Table 38.8.
- Select rectangles with a pre-formation drop—Table 38.8.

39

Rounding Bottoms



RESULTS SNAPSHOT

Upward Breakouts

Appearance	A saucerlike concave price turn	
Reversal or continuation	Short-term bullish consolidation	
	Bull Market	**Bear Market**
Performance rank	5 out of 23	6 out of 19
Break-even failure rate	5%	5%
Average rise	43%	31%
Change after trend ends	–31%	–33%
Volume trend	Upward	Upward
Throwbacks	40%	43%
Percentage meeting price target	57%	53%
Surprising findings	This "bottom" pattern acts as a continuation of the prevailing trend. Throwbacks hurt performance. Tall or wide patterns perform better. Patterns with a rising volume trend or U shape do well.	
Synonyms	Rounding turns, saucers	
See also	Bump-and-Run Reversal Bottoms; Cup with Handle; Head-and-Shoulders Bottoms, Complex; Scallops (ascending and descending)	

Rounding bottoms, rounding turns, and saucers are synonyms for the same formation. Rounding bottoms (RdBs) have a low break-even failure rate with a large average rise, so they perform well. Because the pattern can be tall—like a bowl with high sides instead of a shallow saucer—the measure rule price target ("Percentage meeting price target" in the Results Snapshot) may be hard to reach. Just over half of the RdBs hit their targets.

Surprises for RdBs are plentiful, and the one that continues to amaze me is that these so-called bottom patterns are not bottoms at all. If they were bottoms, they would act as reversals. Occasionally, price does reverse course and the RdB acts as a true bottom. More likely, however, is that RdBs appear in a rising price trend, a rounding turn in which traders catch their breath before the climb resumes.

Tour

Figure 39.1 shows an example of a rounding bottom on a daily scale. I would not call it a good example because the bottom is too irregular. In mid-May there is an out-of-pattern downward price decline that ends with price quickly rebounding. In late June price jumps up then fades back down. The June rise is not uncommon so do not get too excited when it happens in a stock you own. Price should return to near the base of the rounding bottom before continuing the rise. The volume trend takes on the appearance of being rounded if you ignore the annoying spikes in the center.

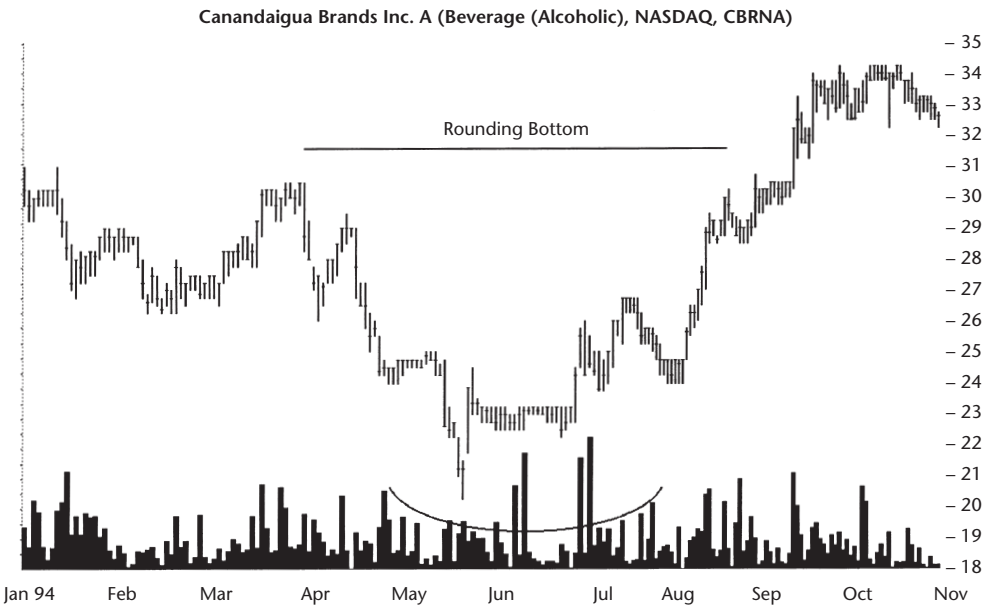


Figure 39.1 A rounding bottom on a daily scale. The bottom takes a brief dip in mid-May and a quick rise in late June.

A rounding bottom marks a struggle between buying demand and selling pressure that is nearly equal. Through the first part of the formation, the sellers have the upper hand as they drive prices lower. Eventually, the forces come into balance and the stock bottoms out and moves horizontally. Later still, buying demand picks up and the stock inches upward. The climb is not always a smooth one. Sometimes, a large upward demand spike occurs sending the price skyrocketing, but in a month or so prices head back down and plane out slightly above where they left off. Then they resume their climb. When the stock reaches the old high, selling pressure usually drives prices lower, forming a handle. Prices recover and break through the old high and push higher still.

Identification Guidelines

As chart patterns go, rounding bottoms are easy to identify. Table 39.1 lists guidelines for their identification.

Weekly scale, rounded bowl shape. Since rounding bottoms are often quite long (in this study, the longest is over 2½ years), I usually use the weekly scale to make identification easy. I search for a price pattern that looks like a bowl or saucer. Once I discover the pattern, a quick glance backward usually finds prices trending upward. The rounding bottom is often a gentle retrace of some of the gains.

Consider Figure 39.2. The most recent up leg of the climb to the formation begins in late December 1991 on very high volume. Prices climb 235% in about 3 months, and then the stock eases over. The decline is not a quick straight-down affair. Rather, the stock moves lower on its way to 4.25 by curving around and flattening out.

Once prices reach the low, they move hesitantly higher by traveling horizontally for several weeks before beginning an accelerated climb. Prices reach the level of the left saucer lip and do not pause. They keep climbing until they reach 13 and then 16 before backing down to 11.

Table 39.1
Identification Characteristics

Characteristic	Discussion
Weekly scale	Use the weekly scale to identify these behemoths, although the daily scale also works well.
Rounded bowl shape	The price trend curves gently, usually over many months and usually after an upward price trend. Connect the weekly low prices to visually construct a saucer or bowl shape in your mind.
Curving volume trend	The volume trend sometimes mimics the price trend by appearing as a bowl but more often is dome shaped.

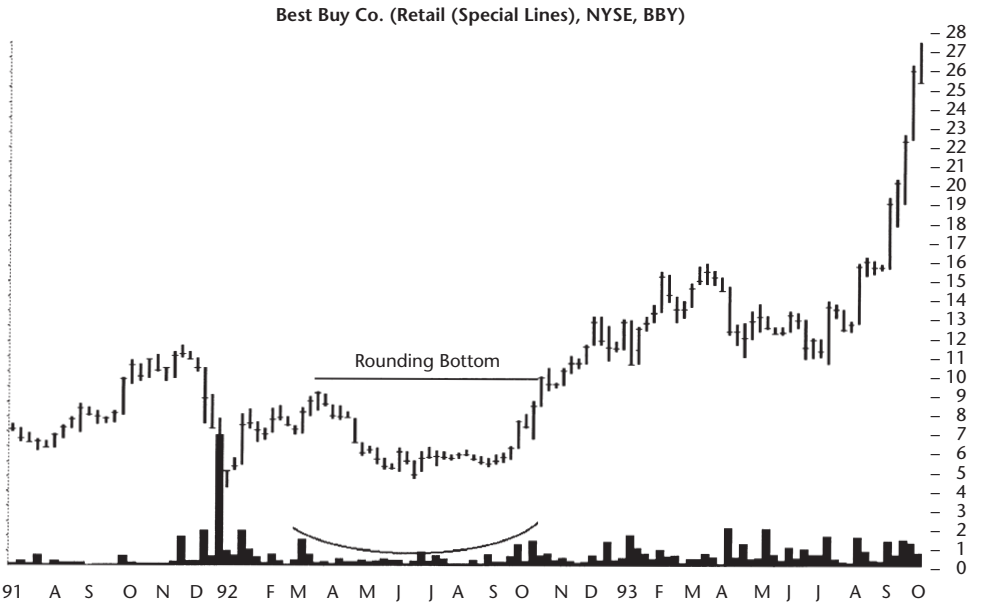


Figure 39.2 This chart is a good example of a rounding bottom on the weekly scale. Notice the bowl-shaped volume trend.

A rounding bottom does not require a handle, which is a price consolidation area that commonly forms immediately after the right saucer lip, but most times you will see one. A handle is typical behavior when prices reach an old high. The rise falters as tepid demand or excessive selling push prices lower; then, the two highs act as a resistance zone. Sometimes, prices make several attempts before pushing through the resistance and moving higher; sometimes, prices just give up and roll back downhill.

Curving volume trend. The volume trend occasionally echoes the price trend by rounding downward too. You can see this in Figure 39.2 although it is not as pronounced as it some times is. However, a dome shape predominates 54% of the time; a saucer or U shape, 46% of the time.

Focus on Failures

Although RdBs have a low failure rate, they occasionally fail, and Figure 39.3 shows an example of a failure. This rounding bottom (points A and B) occurs in a downward price trend, but the bottom is not as smooth as I like to see. The start of the pattern, A, is not well defined as the pause lasts just a few days. The corresponding end, B, marks the beginning of a small handle attached to the rounding bottom.

Prices climb high enough to surpass B and close above it, staging a breakout, but the rise soon falters. The price peaks and valleys over the prior 7 or 8

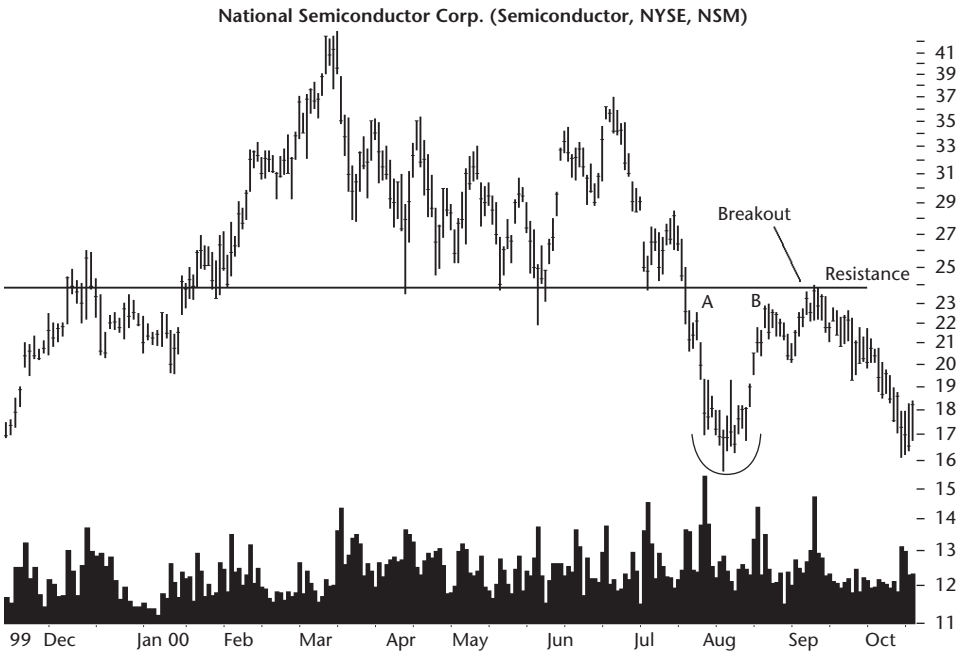


Figure 39.3 Rounding bottom that acts as a short-term reversal of the trend.

months presented just too much overhead resistance. The stock tried to pierce it but failed and dropped, eventually reaching a low of 8.56.

These types of situations are easy to diagnose. Before trading, always look for overhead resistance and underlying support. Knowing when price is likely to stop will give you valuable information. It may be that the trade will not be profitable enough if it hits a wall of resistance. The loss as prices tumble to the support zone may be too large to risk a trade. If the trade does not look right or if the risk versus reward is not low enough, then look for a more promising trade. Good trades (and patterns) are worth waiting for.

Statistics

Table 39.2 shows general statistics for rounding bottoms.

Number of formations. I found 453 RdBs in 500 stocks from mid-1991 to mid-1996 and from 2000 to 2003. Those periods covered the bull and bear market. However, not all of the stocks in the bear market covered the 3-year range (think mergers and buyouts).

Reversal or continuation. Unlike other patterns that are true bottoms, a rounding bottom acts as a consolidation or continuation of the prevailing price trend slightly more often than as a reversal. Continuations substantially outperform in a bull market, but reversals do marginally better in a bear market.

Table 39.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	261	192
Reversal (R), continuation (C)	122 R, 139 C	91 R, 101 C
R/C performance	38% R, 47% C	31% R, 30% C
Average rise	43%	31%
Rises over 45%	108 or 41%	48 or 25%
Change after trend ends	–31%	–33%
Busted pattern performance	–33%[a]	–37%
Standard & Poor's 500 change	18%	–6%
Days to ultimate high	189	105

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Average rise. In a bull market, the average rise is quite good, but the bear market rise pales by comparison, 43% to 31%, respectively. The numbers show the effect of a rising market tide lifting all stocks. I used the right saucer lip as the breakout price in all computations.

Rises over 45%. An astounding 41% of the RdBs in a bull market rise more than 45%. Even RdBs in a bear market do well with 25% climbing more than 45%. This pattern is a strong performer.

Change after trend ends. Once price reaches the ultimate high, it tumbles. In a bear market, the decline retraces its gains and more—declining 33%—on average. In a bull market, the decline is still severe, 31%. This finding shows the need to get out near the top and not buy and hold or get greedy.

Busted pattern performance. If a stock moves up less than 5% above the right rim and then starts heading lower (but being mindful the decline may be a throwback), consider shorting it. The decline averages 33% to 37%. If you guess wrong, be sure a stop is ready to close out the trade.

Standard & Poor's 500 change. The high numbers for the change in the general market shows the influence it has on performance. The 18% market rise helped power the bull market RdBs to a 43% rise. In a bear market, the market downdraft froze the rise at 31%.

Days to ultimate high. Notice how it takes almost twice as long to reach the ultimate high in a bull market than in a bear one. If you do the math, you will find that the rise in a bear market is steeper than in a bull market.

Table 39.3 shows failure rates for RdBs. They start small but quickly climb with the bull market showing better results (lower failures). That observation is no surprise as an upward breakout in a bear market is a countertrend move, which is like swimming against the current.

Half the patterns in a bull market rise less than 35%. That is a good showing compared to other chart pattern types. For bear markets, half the pat-

Table 39.3
Failure Rates

Maximum Price Rise (%)	Bull Market	Bear Market
5 (breakeven)	14 or 5%	9 or 5%
10	31 or 12%	32 or 17%
15	54 or 21%	51 or 27%
20	74 or 28%	70 or 36%
25	102 or 39%	92 or 48%
30	117 or 45%	114 or 59%
35	130 or 50%	125 or 65%
50	167 or 64%	149 or 78%
75	211 or 81%	176 or 92%
Over 75	261 or 100%	192 or 100%

terns rise less than about 26%. Notice how the failure rate climbs for small changes in the maximum price rise. For example, in a bear market, the failure rate triples to 17% from 5% for moves of 5% to 10%. The 15% failure rate is five times as high (27%) as it is at 5%.

The numbers give you a clue as to how well your RdB may perform. If you are looking for price to double, stick to RdBs in a bull market. The larger the maximum price rise, the higher the probability is that your stock will fail to reach it.

Table 39.4 shows breakout- and postbreakout-related statistics.

Table 39.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	52 days	27 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L7%, C11%, H82%	L13%, C32%, H55%
Percentage rise for each 12-month lookback period	L20%[a], C34%[a], H46%	L21%[a], C32%, H32%
Throwbacks	40%	43%
Average time to throwback ends	12 days	9 days
Average rise for patterns with throwback	33%	28%
Average rise for patterns without throwback	50%	33%
Performance with breakout day gap	43%	26%
Performance without breakout day gap	43%	32%
Average gap size	$0.31	$0.39

[a]Fewer than 30 samples.

Formation end to breakout. It takes nearly twice as long in a bull market than a bear market to break out after the pattern ends. In essence, this activity represents the handle length (after the right lip). The implication here is that you have plenty of time to trade this pattern, even if you do not recognize it during development. Trade RdBs only after price closes above the right lip.

Yearly position. Most RdBs have their breakout within a third of the yearly high. Since the chart pattern is a long one and the breakout is near the top of the pattern, the numbers are not surprising.

Yearly position, performance. Mapping performance onto the yearly price range, we find that the best performing RdBs are those with breakouts near the yearly high. The results may change with additional samples, especially in a bull market.

Throwbacks. Throwbacks occur less often in RdBs than in many other chart patterns, but I do not know why. Prices take the usual amount of time to return to the breakout price (9 to 12 days). When throwbacks do occur, the postbreakout rise averages 33% in a bull market and 28% in a bear market. When a throwback is absent, performance improves: 50% and 33%, respectively. Thus, throwbacks retard upward momentum and performance suffers. Before trading, look for overhead resistance and trade patterns without it.

Gaps. Breakout day gaps hurt performance but only in a bear market—32% rise without a gap versus 26% with.

Table 39.5 shows the time it takes prices to reach the ultimate high. Few patterns flame out in the first week. Most take over 2.5 months (70 days) to top out. Such a long time gives price the opportunity to make an extended move (on average, it takes longer to rise farther).

Notice that a month into the trade, 9% of the patterns in a bear market reach the ultimate high (a slight blip). That event may be a warning sign of weakness. I have seen this behavior in other patterns, so if price stalls a month into the trade, consider selling. Bull markets peak a week earlier.

Table 39.6 shows size statistics for the rounding bottom pattern.

Height. Tall patterns perform better than short ones, especially in a bull market (52% versus 38%). I used the median pattern height—from highest high to lowest low—divided by the breakout price as the benchmark. Tall patterns had results above the median, so trade those. Avoid short patterns.

Width. Wide patterns performed better than narrow ones in both bull and bear markets, with the best performance coming from RdBs in a bull mar-

Table 39.5
Frequency Distribution of Days to Ultimate High

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	12%	7%	6%	4%	9%	5%	4%	4%	4%	1%	45%
Bull market	9%	6%	4%	6%	2%	1%	2%	2%	2%	3%	62%

Table 39.6
Size Statistics

Description	Bull Market	Bear Market
Tall pattern performance	52%	32%
Short pattern performance	38%	30%
Median height as a percentage of breakout price	31.58%	24.20%
Narrow pattern performance	38%	28%
Wide pattern performance	48%	34%
Median length	196 days	71 days
Average formation length	241 days	83 days
Short and narrow performance	32%	30%
Short and wide performance	46%	29%[a]
Tall and wide performance	51%	36%
Tall and narrow performance	53%	20%[a]

[a]Fewer than 30 samples.

ket (48% average rise versus 38%). I used the median length as the separator between wide and narrow.

Average formation length. It appears that rounding turns in a bull market are wider (three times as wide) than those in a bear market, perhaps suggesting that the bear market had more violent swings that cut a rounding turn short.

Height and width combinations. Tall and narrow RdBs in a bull market performed better than the other combinations. That finding is odd because tall and wide patterns that do well individually should have outperformed. In a bear market, RdBs that were both tall and wide did well.

Table 39.7 shows volume statistics for rounding bottoms.

Table 39.7
Volume Statistics

Description	Bull Market	Bear Market
Rising volume trend performance	43%	32%
Falling volume trend performance	42%	29%
U-shaped volume pattern performance	43%	33%
Dome-shaped volume pattern performance	42%	30%
Neither U-shaped nor dome-shaped volume pattern performance	54%[a]	22%[a]
Heavy breakout volume performance	44%	30%
Light breakout volume performance	39%	31%

[a]Fewer than 30 samples.

Table 39.8
Miscellaneous Statistics

Description	Bull Market	Bear Market
Higher left rim, performance	48%	30%
Higher right rim performance	39%	31%
Equal rims, performance	45%[a]	30%[a]

[a]Fewer than 30 samples.

Volume trend. RdBs with a rising volume trend performed marginally better than those with a falling volume trend. However, since the numbers are so close, do not place much emphasis on them.

Volume shapes. I expected more RdBs to show U-shaped volume. Instead, the dome shape prevails, but only 51% of the time. As to performance, RdBs with U-shaped volume perform slightly better than dome shaped. The random shapes have too few samples to take seriously (10 in bull markets and 18 in bear markets).

Breakout volume. When breakout volume was above the 30-day average in a bull market, RdBs tended to outperform. In a bear market, a slight performance edge went to RdBs with light breakout volume.

Table 39.8 shows miscellaneous statistics.

Rims and performance. Just for fun, I looked at the performance of RdBs with a higher left rim, higher right rim, or rims at the same price. Those RdBs with a higher left rim performed substantially better than did those with a higher right rim in a bull market. In a bear market, the performance results were nearly the same.

Trading Tactics

If you are thinking about trading this pattern, here is one key trick for improving your performance with it: Wait for price to close above the right saucer lip before investing. Table 39.9 outlines other trading tactics.

Measure rule. The measure rule helps estimate the potential profit. To apply the measure rule and help you visualize its use, consider the chart shown in Figure 39.4. Subtract the lowest low in the saucer from the right saucer lip. In Figure 39.4, the low is 25 and the right saucer lip is (arguably) 31.44,(point B), giving a formation height of 6.44. Add the height to the value of the right saucer lip to get the target price. In this case, the target is 37.88 and prices reach that level in late January.

Wait for breakout, watch for handle. I consider rounding bottoms to be one of the more treacherous formations. Take another look at Figure 39.4. In judging when the breakout occurs, you can use either saucer lip. Use

Table 39.9
Trading Tactics

Trading Tactic	Explanation
Measure rule	Subtract the lowest low from the right saucer lip. Add the difference to the value of the right saucer lip to get the target price. This is the minimum price move to expect. The measure rule only works about half of the time, so be conservative and lower your target.
Wait for breakout	Wait for prices to rise (close) above the left or right saucer lip before buying, whichever is at a lower price.
Watch for handle	Many times prices will reach the level of the left saucer lip then dip to form a handle. Buy when prices rise above the right saucer lip (or pierce a handle trend line moving up).

whichever one gets you in soonest. Unfortunately, this rounding turn has no left lip. How do you gauge a breakout? That is the situation I faced. I learned that in such circumstances I needed to wait for the handle to form and prices to climb above the handle high (or right cup lip). When it did (point A), or so I thought, I paper traded the stock and bought in, just as it crested (point B). That turned out to be a minor high. Prices dropped the next day and then slowly recovered making another handle. A good place to sell is when prices pierce the up trend line in early December.

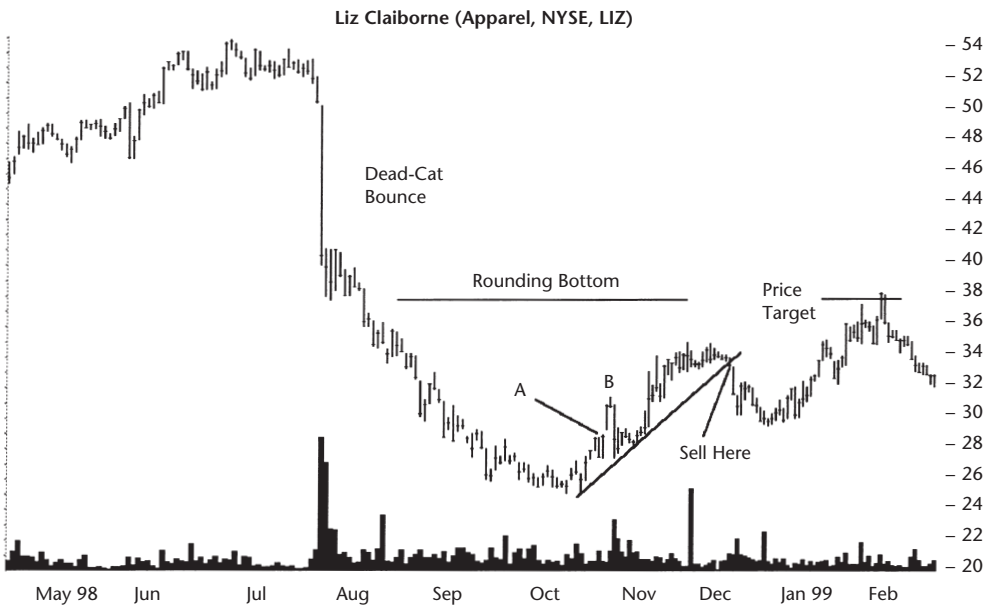


Figure 39.4 A treacherous example of a rounding bottom that has no left saucer lip. The rounding turn forms after disappointing earnings send the stock into a dead-cat bounce.

Sample Trade

How do you use the trading tactics to improve your investment performance? Consider what Glen did with the situation shown in Figure 39.5. His dream was to become a day trader, but he had neither the trading capital nor the necessary skills for the job. He decided to get there one trade at a time, taking a longer time to trade and working down to interday trading.

In December, as he was flipping through his charts, he came across what appeared to be a mild double bottom. On the daily chart the two bottoms in August and November were barely discernible. Was it a valid formation and should he buy the stock now? Glen decided that the retrace between the two bottoms was not high enough and the two bottoms not clear enough to be worth considering. He justified his action by thinking that if he was having a hard time spotting the formation, then others would have the same trouble. If no one spots the formation, then prices will not rise.

When he flipped to the weekly chart, it changed the characterization of what he was seeing. On his screen was an obvious rounding bottom. The volume pattern supported the conclusion: receding as prices declined and rounding up as prices rose. So, he decided to wait for the rounding bottom to stop near the prior saucer lip at about 21.38. When it paused for 2 weeks in February, he knew the formation was primed. The question then became, what was it going to do next? The only way to find that out was to wait.

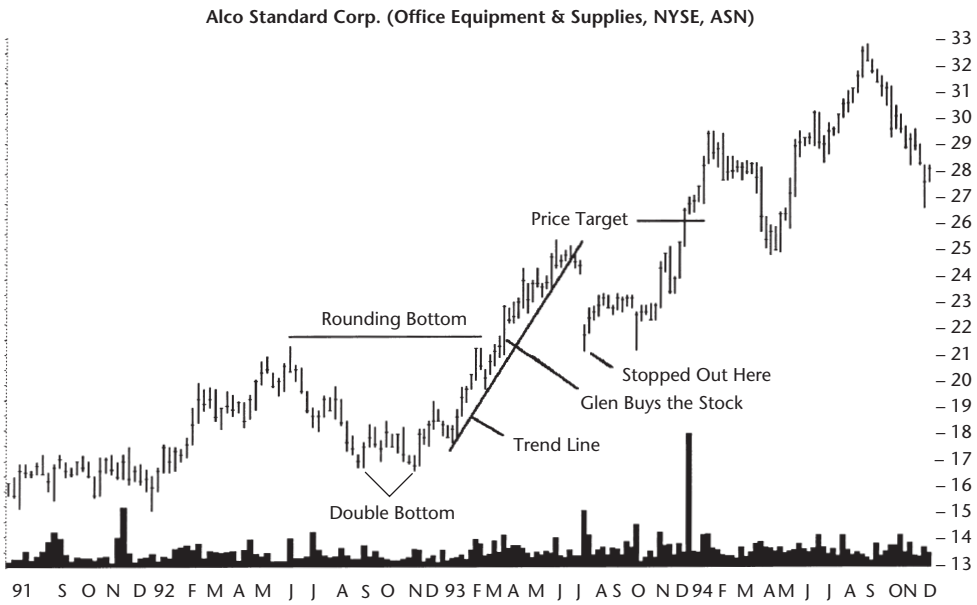


Figure 39.5 The double bottom formation is barely discernible within the rounding bottom on the weekly scale.

The following week prices dropped. He waited until prices closed above the right saucer lip and headed higher. He knew that to buy earlier risked a downturn in the stock from which it might not recover for a long time. If the stock ventured above the right saucer lip, then the probabilities suggested a continuing push higher.

When prices hit 22, he bought. He looked back at his chart and decided to put a stop-loss order .15 below the saucer lip, just below a support level. He decided that if the stock hit his stop, in all likelihood it was going down. Content with his investment decision and trading plan, he was confident that his career change to day trading was a simple step away. He was even more confident as the stock climbed. He began looking through brochures from several companies that offered seminars on day trading. Then the stock declined and closed below the up trend line. It was a warning sign that anyone could have missed. Glen certainly did.

The following week when he received a call from his broker saying prices had hit his stop-loss order, he was shocked. Glen booked a loss of about a buck a share. As he watched the stock, he became even more upset. It turns out the stock sold at the low for the week.

Three years later, after day trading was over for the day, Glen happened to review this trade. He decided to pull up the chart and gasped at what he found. The stock peaked at 66, exactly triple his purchase price.

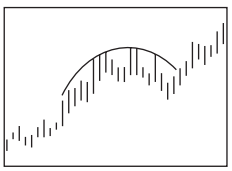
For Best Performance

The following list includes tips and observations for selecting rounding bottoms that perform well. Consult the associated table for more information.

- Use the identification guidelines to help select the pattern—Table 39.1.
- Trade rounding bottoms in a bull market—Table 39.2.
- Continuations in a bull market perform substantially better than reversals—Table 39.2.
- Patterns in a bull market have lower failure rates—Table 39.3.
- Select patterns with breakouts near the yearly high—Table 39.4.
- Avoid throwbacks—Table 39.4.
- Expect to take profits 4 to 5 weeks into the trade—Table 39.5.
- Select tall patterns or wide patterns—Table 39.6.
- Choose patterns with a rising volume trend and U-shape—Table 39.7.
- Trade patterns with heavy breakout volume in a bull market—Table 39.7.
- Pick rounding bottoms with the left rim higher than the right in a bull market—Table 39.8.

40

Rounding Tops



RESULTS SNAPSHOT

Upward Breakouts

Appearance	As prices move up, they curve around and then breakout upward.	
Reversal or continuation	Short-term bullish continuation	
	Bull Market	**Bear Market**
Performance rank	13 out of 23	16 out of 19
Break-even failure rate	9%	16%
Average rise	37%	19%
Change after trend ends	–31%	–35%
Volume trend	Downward	Downward
Throwbacks	53%	52%
Percentage meeting price target	61%	35%
Surprising findings	Busted patterns perform well. The best performance comes from breakouts near the yearly low; breakouts with gaps; tall, narrow, and tall and narrow patterns; and patterns with a falling volume trend.	
Synonyms	Domes, rounding turn	
See also	Bump-and-Run Reversal Tops; Head-and-Shoulders Tops, Complex; Scallops, Ascending and Inverted; Scallops, Descending and Inverted	

Downward Breakouts

Appearance	Same, but breakout is downward.	
Reversal or continuation	Short-term bearish reversal	
	Bull Market	**Bear Market**
Performance rank	5 out of 21	10 out of 21
Break-even failure rate	12%	9%
Average decline	19%	23%
Change after trend ends	57%	53%
Volume trend	Downward	Downward
Pullbacks	48%	57%
Percentage meeting price target	24%	15%
Surprising findings	Continuations do better than reversals. Busted patterns perform well. The best performance comes from breakouts near the yearly low. Pullbacks hurt performance, but breakout day gaps improve it. Tall patterns, patterns with U-shaped volume, heavy breakout volume, or higher right rim tend to outperform.	
Synonyms	Same as for upward breakouts	
See also	Same as for upward breakouts	

When is a top not a top? When it is a rounding top and prices break out upward 53% of the time. I like to refer to this pattern not as a rounding top, but as a rounding turn (RdT).

The Results Snapshot shows the performance results. For upward breakouts, RdTs in a bull market perform better (higher average rise with a lower failure rate) than do those in a bear market. As one might expect, the results flip for downward breakouts. RdTs in a bear market outperform those in a bull market.

Surprises for RdTs are self-explanatory with the exception of rims. Think of the letter U flipped upside down. The left and right rims are the ends of the U. Patterns with a higher right rim tend to outperform.

Tour

Figure 40.1 shows an example of a rounding turn on the daily scale. Notice how the starting (A) and ending (B) points are at nearly the same price. This characteristic differentiates the pattern from an inverted scallop, either ascending or descending. A single bump also separates it from a complex head-and-shoulders

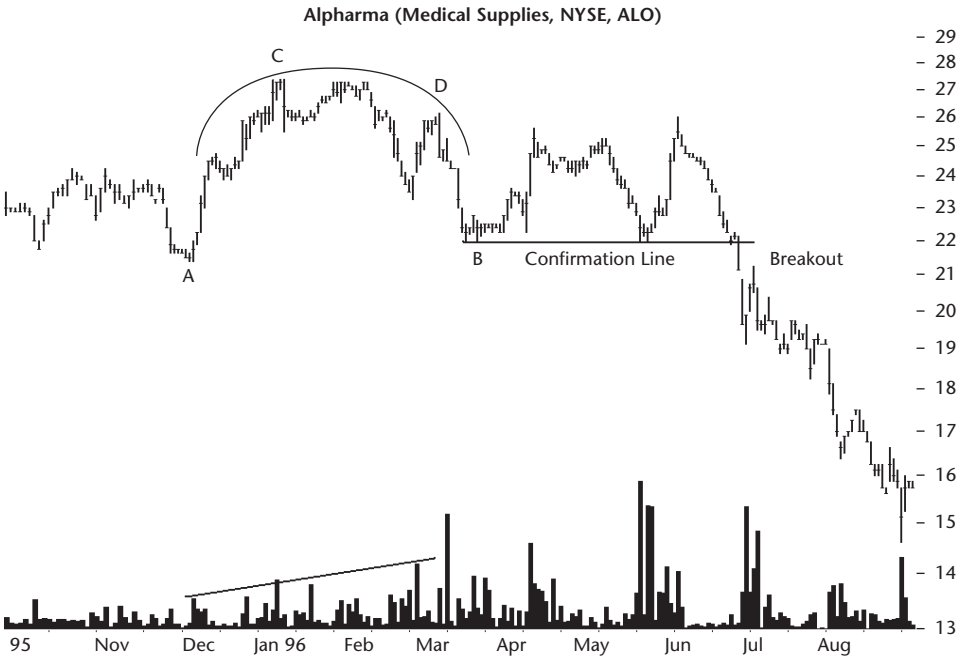


Figure 40.1 A rounding turn begins at point A and rounds over to end near where it begins (B). Points C and D make the curve look irregular but they occur often in rounding turns. Volume usually trends downward, unlike this example.

top, although I did not remove any RdTs that were part of a head-and-shoulders formation. In this example, the turn is a gentle one but still has irregular price moves poking through (points C and D). Volume trends upward in this example, but that is unusual for rounding turns.

The reason a rounding turn occurs is not difficult to explain. Prices move up on bullish enthusiasm confirmed by high volume at the start. Knowing that prices are climbing, sellers hold onto their shares a bit longer, forcing demand to climb along with the share price. However, as prices rise, buying demand tapers off and eventually catches up to supply. Prices round over at the top. Since the shares are fetching a premium to intrinsic value, more sellers appear. The smart money starts selling, too, and the price drops.

Once investors discover the upward price momentum has turned, selling pressure increases, forcing the price down. Volume may pick up as more traders try to dump their shares as prices decline. Eventually, the decline ends when nervous novices toss in the towel and sell their holdings. When all those who considered selling their shares have sold, the smart money jumps in and buys the stock, or sell it short, eventually pushing the stock to new highs (upward breakout) or new lows (downward breakout).

Identification Guidelines

Table 40.1 outlines the characteristics that rounding tops possess.

Daily or weekly scale. Using either the daily or weekly time scale, prices start moving up from the base of the dome formation. As they move up, they bend over and round off at the top, then continue their rounding turn until they head down and retrace much of the prior rise. Buying demand often cuts the decline short before prices return to where they started.

Even end prices. Look for the ends of the RdT to be near the same price, say, within 5% (but allow variations). In the 776 patterns I looked at, the bottom-to-bottom price variation averaged 3%, with the end usually slightly higher than the start 52% of the time. What you do not want to select are inverted scallops. Those have starting or ending prices well away from the other rim.

Rounded half-moon shape. The price climb from start to end should appear smooth, as a gentle rounding turn like a half-moon or inverted U. Allow prices to pierce the top occasionally, creating an irregular appearance, and for narrow but tall patterns to look like an inverted V instead of a U.

Curving volume trend. Volume is often lowest at the center of the formation and higher at either end. This observation is just a guideline, not an inviolable rule. Many times you will see an irregular volume trend over the life of the formation. Pay it no heed; it is still a rounding top. What is important is that prices round over and a bowl-shaped volume trend just adds evidence to the veracity of the chart pattern.

Breakout. The breakout can be in either direction. An upward breakout occurs when price closes above the pattern high, and that happens 53% of the

Table 40.1
Identification Characteristics

Characteristic	Discussion
Daily or weekly scale	These formations are often long enough to appear on the weekly charts as well as the dailies.
Even end prices	The price at the start of the pattern is close to the end of the pattern. The average difference is 3%, with the end higher than the start 52% of the time.
Rounded half-moon shape	The price trend curves beginning from the lower left upward to the top of the dome then rounds over and moves down again.
Curving volume trend	Volume is occasionally higher on either end and shallow in the center.
Breakout	A close above the highest high in the pattern signals an upward breakout; a close below the pattern end (right rim) signals a downward breakout.

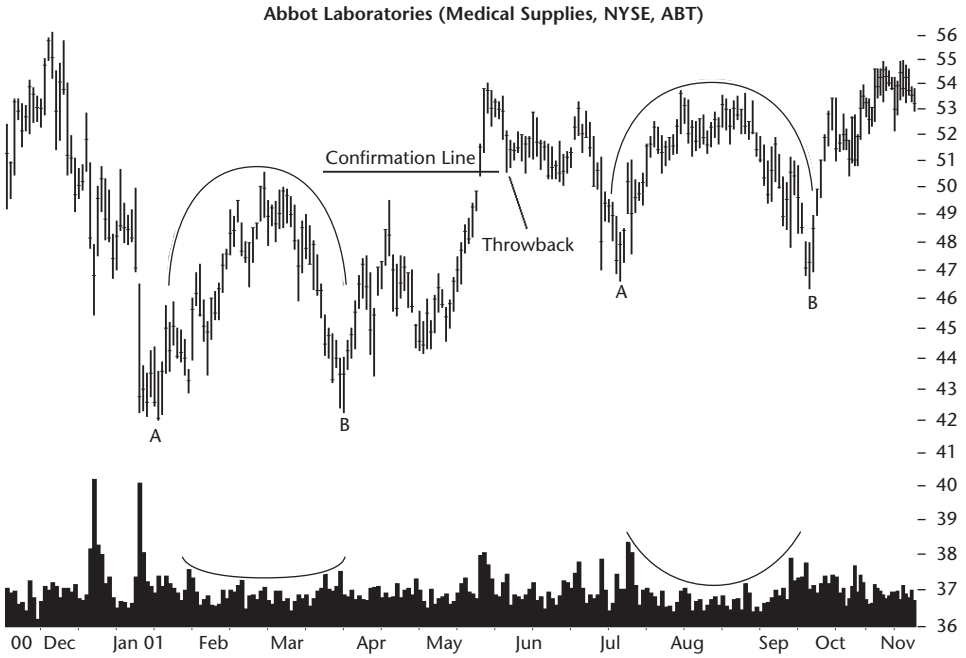


Figure 40.2 Two rounding turns with the ends nearly at the same price. Both have U-shaped volume and upward breakouts.

time in the stocks I looked at. A downward breakout happens when price closes below the right rim (the pattern's end).

Figure 40.2 shows two examples of rounding turns on the daily scale. Notice the gentle curve with the August pattern appearing more rounded. The February pattern looks like someone squeezed it in a vice—an inverted V shape.

The start and end of each pattern is at nearly the same price. That characteristic is important because it differentiates RdTs from scallops. The rounding turn may be part of a complex head-and-shoulders pattern, so check for that, and if so, trade it as a complex head-and-shoulders pattern.

Volume in these examples appears U-shaped and that is the predominate shape for rounding turns. Do not eliminate an RdT because the volume shape is domed. In a bear market with an upward breakout, performance improves in RdTs with dome-shaped volume (the other combinations of market conditions and breakout directions for RdTs do best with U-shaped volume).

Both RdTs break out upward when price closes above the highest high in the pattern. For downward breakouts, price must close below point B.

Focus on Failures

Figure 40.3 shows a typical example of a failure. The chart pattern obeys the identification guidelines as the turn appears rounded with prices A and B (the

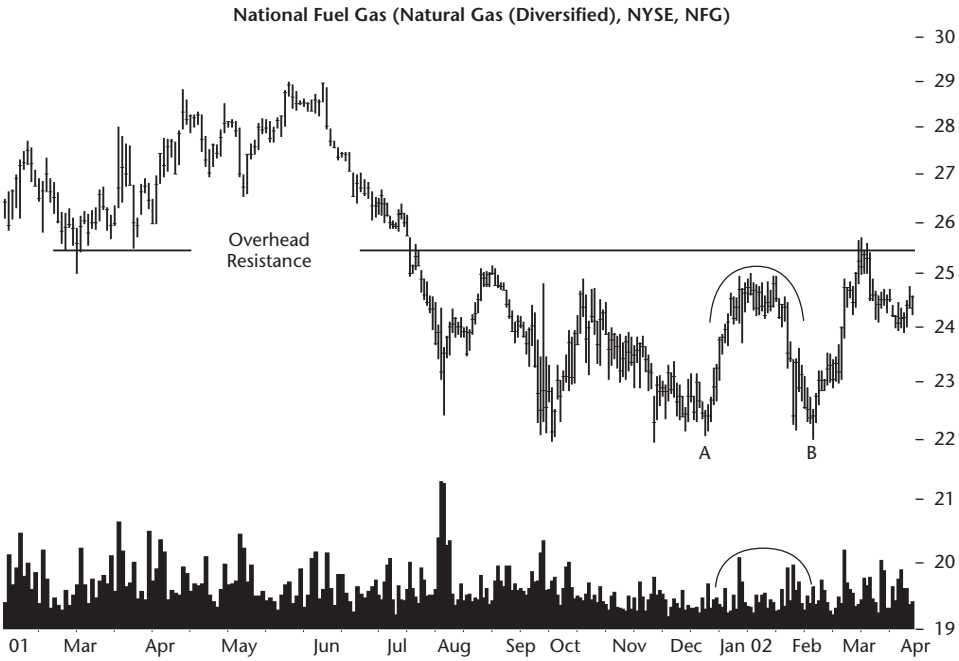


Figure 40.3 Overhead resistance blocks this rounding turn's upward breakout.

pattern's start and end) nearly the same. Volume is dome shaped, but that is typical for rounding turns—it happens 43% of the time.

Buying demand and selling pressure determines stock price movement. Fundamentals drive those forces. If news comes out that a company is considering bankruptcy, you can be sure the stock price is going down. Most news influences price less.

For example, beginning in late January 2002, natural gas prices started rising and broke out upward from a symmetrical triangle in March, just as the stock made a new minor high. Gas prices peaked in May and started a long slide that ended in August. By contrast, the stock peaked in March 2002 and continued lower. Thus, even as natural gas was making new highs, the stock was tumbling—"diverging" as we call it. However, both the stock and natural gas bottomed within a few weeks of each other, with the stock leading the way higher.

Technical factors also influence price movement and contribute to a pattern failure. For example, if you know that Joe Trader is buying and his record is the envy of the industry, you may want to buy, too. This herd instinct is what momentum is all about. Another example: Mutual funds spread their trades over several brokers and try to keep their elephant-like movements secret. Their large trades can cause price swings, so they spread their orders over time to lessen the impact. If you see a broker that handles trades for a mutual fund selling a large block of shares, you may want to dump your holdings too (or short the stock). This selling pressure contributes to downward momentum.

In Figure 40.3, the stock stages an upward breakout but bumps against overhead resistance. I only show the end of the resistance zone that dates back to December 1997, about 5 years before the pattern appeared. You can see how prices tried in August, September, and again in October to push through the ceiling. In early March 2002, it succeeded in making a new high but the rise soon faltered, predicting a tumble in natural gas prices. Not shown, but in late July, the stock dropped to 15.61, a multiyear low.

Many times the reason price changes trend is not as clear as in this example (overhead resistance and diverging gas prices). However, by digging into the fundamentals and with knowledge of the technicals—spiced with experience—you will be surprised at how often you can call the turns.

Statistics

Table 40.2 shows general statistics for rounding tops.

Number of formations. After finding few patterns for the first edition of the *Encyclopedia*, I searched the 5 years starting in mid-1991 and another 5 years starting from early 1999. Using 500 stocks, I found 776 patterns, split between market conditions and breakout directions.

Reversal or continuation. Just over half the time (55%), the pattern acts as a continuation of the price trend, due in large part by the results of RdTs in a bull market with upward breakouts. Continuations perform as well or beat reversals, on average, so trade with the price trend (shown before the pattern).

Table 40.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	238	173	157	208
Reversal (R), continuation (C)	84 R, 154 C	90 R, 83 C	89 R, 68 C	90 R, 118 C
R/C performance	36% R, 38% C	19% R, 19% C	–19% R, –20% C	–21% R, –25% C
Average rise or decline	37%	19%	–19%	–23%
Rises or declines over 45%	82 or 34%	26 or 15%	7 or 4%	14 or 7%
Change after trend ends	–31%	–35%	57%	53%
Busted pattern performance	53%[a]	64%[a]	–28%[a]	–38%[a]
Standard & Poor's 500 change	18%	–4%	6%	–13%
Days to ultimate high or low	161	77	45	25

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Average rise or decline. The rise in a bull market is just above average for all other chart pattern types, but the decline in a bear market is inferior. The numbers suggest you want to trade this pattern with the market trend: upward in a bull market and downward in a bear market. Countertrend moves show weaker results.

Rises or declines over 45%. Over a third of the patterns with upward breakouts in a bull market rise over 45%. That is a good showing. The other combinations of market conditions and breakout directions do not perform as well.

Change after trend ends. As you might guess, the best performance comes after price reaches the ultimate low from a downward breakout in a bull market. Price climbs an average of 57%. However, the rise in a bear market is not too shabby either: 53%. The key is finding the ultimate low. Even if you wait for a 20% rise, which signals a trend change, you still have over 30 percentage points left in which to participate (on average). Use a stop-loss order to protect your position.

Busted pattern performance. The pattern really performs when it busts. By that, I mean price moves less than 5% beyond the breakout before reversing and heading off in the new direction. The downside is that few patterns bust (fewer than 30 in each column), so trading opportunities are limited. Even worse, it will be difficult to tell a busted pattern from a common retrace unless you wait for prices to move to the opposite end of the pattern. That waiting sacrifices a majority of the move.

Standard & Poor's 500 change. Notice how the strength of the average rise or decline follows the market trend. The largest rise comes from RdTs in a bull market with upward breakouts. The best decline comes from RdTs in a bear market with downward breakouts. Trades counter to the market trend suffer. Therefore, always trade with the market (and industry) trend.

Days to ultimate high or low. The rise in a bull market (37% in 161 days) takes longer to reach the ultimate high than the decline in a bear market (23% in 25 days) takes to reach the ultimate low. The decline must be steeper than the rise. This finding implies that you can make more trades in a bear market than in a bull one, but the profit will average considerably less.

Table 40.3 shows failure rates for RdTs. The lowest failure rates associate with the market trend: trading long in a bull market and short in a bear market. Countertrend trades have more risk. For example, 20% of the RdTs in bull markets with upward breakouts fail to rise more than 10%, but in a bear market, 36% fail to rise as far. Half the patterns (51%) in a bear market fail to drop more than 20%, but 57% in a bull market fail to drop 20%.

You can see how the failure rates start low and quickly climb for small changes in the maximum price rise or decline. For example, RdTs in a bear market with downward breakouts show failures of 9%, 22%, and 39% for declines of 5%, 10%, and 15%, respectively. A triple and then a double is common for many chart pattern types.

Table 40.4 shows breakout- and postbreakout-related statistics.

Table 40.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	22 or 9%	28 or 16%	19 or 12%	18 or 9%
10	47 or 20%	62 or 36%	42 or 27%	46 or 22%
15	63 or 26%	95 or 55%	62 or 39%	82 or 39%
20	82 or 34%	111 or 64%	90 or 57%	107 or 51%
25	101 or 42%	123 or 71%	109 or 69%	129 or 62%
30	112 or 47%	133 or 77%	124 or 79%	150 or 72%
35	127 or 53%	141 or 82%	131 or 83%	166 or 80%
50	170 or 71%	155 or 90%	154 or 98%	200 or 96%
75	204 or 86%	166 or 96%	157 or 100%	207 or 100%
Over 75	238 or 100%	173 or 100%	157 or 100%	208 or 100%

Table 40.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	112 days	71 days	58 days	79 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L3%, C18%, H79%	L9%, C23%, H68%	L70%, C27%, H3%	L78%, C21%, H1%
Percentage rise/decline for each 12-month lookback period	L45%[a], C44%, H36%	L31%[a], C21%, H18%	L20%, C18%, H12%[a]	L24%, C19%, H9%[a]
Throwbacks/pullbacks	53%	52%	48%	57%
Average time to throwback/ pullback ends	9 days	9 days	9 days	9 days
Average rise/decline for patterns with throwback/pullback	36%	20%	–17%	–20%
Average rise/decline for patterns without throwback/pullback	39%	19%	–22%	–27%
Performance with breakout gap	42%	20%	–25%	–24%
Performance without breakout gap	36%	19%	–18%	–22%
Average gap size	$0.83	$0.59	$1.20	$1.97

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Formation end to breakout. Once prices drop to the right rim, they take between 2 and 4 months, on average, to climb above the pattern's high. For downward breakouts, the delay is shorter but still quite long, about 2 months (58 to 79 days).

I expected the shortest time to the breakout to follow the market trend. If a rising tide lifts all boats, then that would help the stock climb faster. That explanation sounds good but the numbers suggest otherwise for both bull and bear markets. Another explanation is that stocks in a bear market struggling to rise against the outgoing (falling) tide must have a very good reason to climb. The enthusiasm powers the stocks upward much faster than stocks coasting upward in a rising market.

The key to successful trading is finding stocks in a bull market that have a need to shoot higher or finding those in a bear market that not only want to crash and burn, but also dig a hole so deep as to reach the earth's core.

Yearly position. As you might guess, upward breakouts appear near the yearly high and downward breakouts occur often near the yearly low.

Yearly position, performance. With most of the patterns hovering near the yearly high or digging near the yearly low, the sample counts are few for the other extremes. Keeping that finding in mind, RdTs perform best when the breakout is near the yearly low.

Throwbacks and pullbacks. A throwback or pullback occurs about half the time. It takes, on average, 9 days for price to return to the breakout price. When a throwback or pullback occurs, performance usually suffers. The lone exception is for RdTs with upward breakouts in a bear market. Those with throwbacks rise 20%. Without throwbacks, the rise averages 19%.

Gaps. I am not sure how important the gap performance numbers are because with a breakout up to 4 months after the end of the pattern, who is going to notice a breakout day gap? However, in all cases, gaps helped performance, sometimes substantially. Notice how large gaps are during a downward breakout.

Table 40.5 shows a frequency distribution of time to the ultimate high or low. Notice how many RdTs have a trend change in the first week or two. The worst case is for downward breakouts in a bear market. Almost 60% hit bottom in the first 2 weeks. That finding seems odd because the breakout direction is in the direction of the market trend. Thus, the down move must be violent and suggests that you should short the stock *before* the breakout. Otherwise you may miss a potentially large move (think breakaway gap on the breakout day). Look for the general market (S&P 500 index) and industry to be trending downward, an absence of underlying support, and a price downtrend before the RdT. If those conditions exist, consider shorting the stock. The stock will bottom at the right rim and then bounce up for a month or two. When it peaks during the bounce and starts moving down again, short the stock. That move should get you on the correct side of the trade before the breakout. Use a progressive stop (lower it as price drops) in case you are wrong.

Table 40.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	25%	6%	6%	6%	8%	4%	2%	3%	2%	1%	37%
Bull market, up breakout	15%	3%	5%	5%	4%	4%	3%	4%	2%	2%	55%
Bear market, down breakout	46%	13%	9%	8%	6%	2%	3%	1%	0%	2%	9%
Bull market, down breakout	25%	8%	10%	10%	6%	4%	7%	6%	2%	2%	21%

The other combinations of breakout direction and market conditions take longer to reach the ultimate high or low, sometimes much longer. For example, 55% of RdTs in a bull market with upward breakouts take longer than 70 days to reach the ultimate high. While bear markets show the need to take a position quickly, bull markets seem more relaxed. You have plenty of time to buy in, but you have to be patient to get a good return.

Table 40.6 shows statistics related to pattern size.

Height. Tall patterns perform better than short ones in all market conditions and breakout directions. For example, RdTs taller than the median in a bull market have gains averaging 41%, but short ones rise only 34%.

Width. RdTs narrower than the median perform well when the breakout is upward. I used the median length as the separator between narrow and wide.

Average formation length. The average pattern length varies from 83 to 138 days. Notice how the average is larger than the median, suggesting that large outliers pull the average upward.

Height and width combinations. Which combination of height and width works best? RdTs that are both tall and narrow perform best. The worst performance comes from short and narrow or short and wide patterns.

Table 40.7 shows volume-related statistics for rounding tops.

Volume trend. Patterns with a falling volume trend outperform those with a rising volume trend in all cases but one (bull market, down breakout). For example, in a bull market, up breakout, RdTs with a rising volume trend had postbreakout gains averaging 33%, but those with a falling volume trend gained 41%.

Volume shapes. Most of the time, RdTs with U-shaped volume perform better than the other shapes. The one exception is for RdTs in a bear market with an upward breakout. When volume has a dome shape, RdTs perform better (21% versus 19%).

Table 40.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	41%	22%	–21%	–27%
Short pattern performance	34%	16%	–18%	–19%
Median height as a percentage of breakout price	23.90%	23.14%	31.02%	42.41%
Narrow pattern performance	39%	20%	–19%	–22%
Wide pattern performance	35%	19%	–19%	–24%
Median length	123 days	72 days	118 days	83 days
Average formation length	138 days	83 days	134 days	111 days
Short and narrow performance	33%	17%	–19%	–19%
Short and wide performance	36%	14%[a]	–17%[a]	–19%
Tall and wide performance	35%	21%	–21%	–27%
Tall and narrow performance	52%	25%[a]	–21%[a]	–28%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Table 40.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	33%	16%	–19%	–22%
Falling volume trend performance	41%	22%	–19%	–23%
U-shaped volume pattern performance	42%	19%	–21%	–24%
Dome-shaped volume pattern performance	34%	21%	–18%	–20%
Neither U-shaped nor dome-shaped volume pattern performance	30%[a]	13%[a]	–15%[a]	–21%[a]
Heavy breakout volume performance	39%	19%	–20%	–24%
Light breakout volume performance	30%	19%	–16%	–19%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Table 40.8
Miscellaneous Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Higher left rim, performance	35%	19%	–17%	–22%
Higher right rim performance	39%	19%	–21%	–24%
Equal rims, performance	33%[a]	30%[a]	–22%[a]	–15%[a]

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Breakout volume. RdTs with breakout volume that exceeds the 30-day average show performance equal to or better than those with light breakout volume.

Table 40.8 shows miscellaneous rounding top statistics.

Rims and performance. Patterns with a higher right rim outperform those with a higher left rim most of the time. By rim, I mean the start or end of the rounding turn. For example, in Figure 40.1, the rims are points A and B, with B, the right rim, higher than the left. In Figure 40.2, the August rounding turn shows a higher left rim (A). Few RdTs showed equal prices, so I consider the performance results anomalous.

Trading Tactics

Table 40.9 shows trading tactics for rounding tops.

Table 40.9
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute the formation height by subtracting the right rim low from the formation high. Add the difference to the high for upward breakouts or subtract the difference from the right rim low for downward breakouts to get the target price.
Buy or short on breakout	Buy when prices close above the dome high, or below the right rim low.
Buy above 30% retrace	For a more risky but profitable trade, buy when prices rise above the right dome low by at least 30% of the formation height.
Right low support	The right rim low shows support. If prices throw back to this level and continue down, sell or sell short.

Measure rule. The measure rule estimates the minimum expected price target. The rule works reasonably well, 61% of the time, for RdTs in bull markets with upward breakouts. When using the rule, be sure to look for resistance areas. They are the areas where the price rise is likely to stall, forcing the measure rule to underperform. To use the measure rule, subtract the lowest low at the right rim from the highest high in the formation, which gives the formation height. In Figure 40.4, point A shows the lowest low at the end, 45.63, whereas point B depicts the highest high at 49.88. Add the difference, 4.25 (the formation height), to the highest high (point B) to get the target price. In this case, the target is 54.13, met in early July.

Buy or short on breakout. There are several ways to profit from rounding tops. The suggested method is to trade in the direction of the breakout.

Buy above 30% retrace. For upward breakouts, that means buying when price closes above the dome high. For downward breakouts, that means shorting below the right rim low. If you like to take more risk, buy at a lower price (one-third of the formation height, above the right dome low). I use the 30% retrace amount since a rise of that magnitude usually breaks a down-sloping trend line that sometimes forms as prices decline during the rounding turn. A breakthrough of a trend line or even a 30% retrace is usually strong enough to command attention from other investors (they jump on the uptrend) and minimizes the chance of a downward breakout.

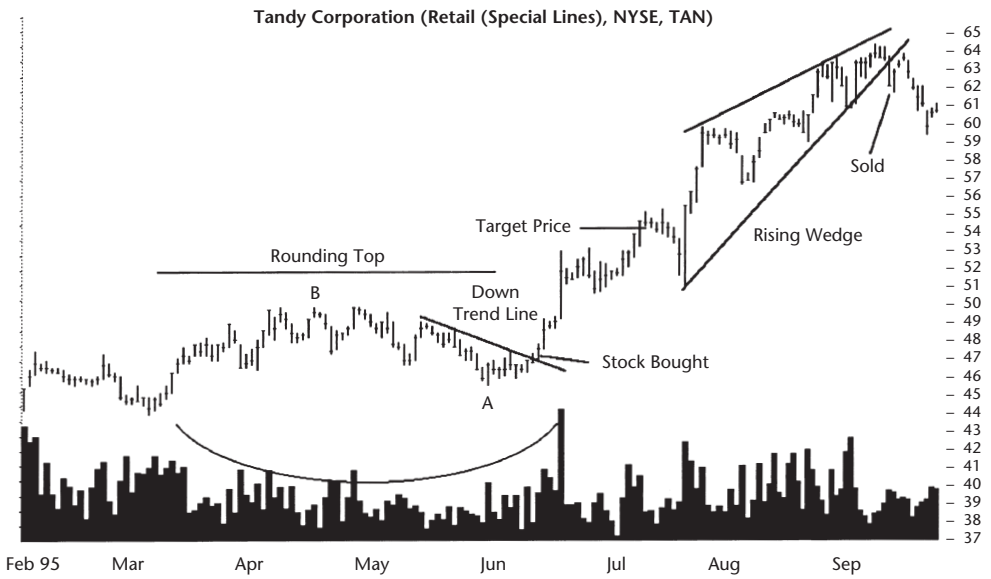


Figure 40.4 A rounding top with a rising wedge. As described in the Sample Trade, this formation turned into a profitable opportunity for Sharon. She bought into the situation and sold after the rising wedge breakout.

Right low support. If you purchase a stock after a rounding turn completes and see prices rise for a month or so, curl around, and fall below the right dome low, sell the stock. Most likely it is going to continue down. Watch for a bounce at the right rim low as that area sometimes acts as a support zone. As always, look for other areas of support to gauge how far the decline may go.

Sample Trade

Sharon is a high-energy player. She is the one you see careening out of control when skiing down the expert slope. She is the one you see night after night relaxing in a bar after work, surrounded by men. In other words, she is fun to be with, the life of the party.

Her investment style mirrors her lifestyle. When she spotted the rounding top pictured in Figure 40.4, she waited for just the right moment to buy. At first she thought it might be a head-and-shoulders top, but the two shoulders and head were at about the same price level and the volume pattern was all wrong.

In mid-June, when prices began heading up and pierced the downsloping trend line, she bought the stock and received a fill at 47. Then she held on and watched the stock daily. As prices rose, she noticed that the oscillations from minor high to minor low seemed to be narrowing. To her, these oscillations indicated that a rising wedge was forming, but the volume pattern was abnormal. With a rising wedge, the volume pattern tends to recede over time.

In early September, Sharon grew alarmed because the volume trend began to decline drastically. Her studies showed a tendency for a severe dropoff in volume just before a rising wedge breakout, so the day after prices pierced the lower wedge trend line, she sold the stock at 62.

Her analysis was perfect. After she sold the stock, prices pulled back to the lower wedge trend line and hung on for 2 more days before tumbling. At the start of the new year, the stock reached a low of 34.13

For Best Performance

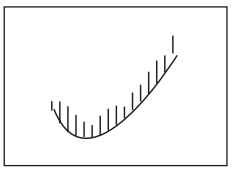
The following list includes tips and observations to help you select better performing RdTs. Refer to the associated table for more information.

- Correctly identify the pattern using the guidelines—Table 40.1.
- Trade with the market trend: Go long in a bull market, short a bear market—Table 40.2.
- Continuations perform better than reversals—Table 40.2.
- Countertrend trades have larger failure rates, so trade in the direction of the market trend—Table 40.3.

- Select patterns with downward breakouts near the yearly low—Table 40.4.
- Throwbacks and pullbacks usually hurt performance. Avoid overhead resistance or underlying support—Table 40.4.
- Choose patterns with breakout day gaps—Table 40.4.
- In a market and industry downtrend, no underlying support beneath the RdT, and a price downtrend leading to the rounding turn, short the stock. After price reaches the right rim low, bounces higher, and then starts moving down, place the trade and use progressive stops—Table 40.5.
- Select patterns that are tall or both tall and narrow—Table 40.6.
- Pick rounding turns with a falling volume trend, U-shaped volume, and heavy breakout volume—Table 40.7.
- Select patterns with a higher right rim—Table 40.8.

41

Scallops, Ascending



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Price peaks, retraces, curves around, and then forms a higher peak. The price pattern looks like the letter J with an upward breakout.	
Reversal or continuation	Short-term bullish continuation	
	Bull Market	**Bear Market**
Performance rank	16 out of 23	18 out of 19
Break-even failure rate	10%	16%
Average rise	31%	19%
Change after trend ends	–32%	–34%
Volume trend	Upward	Upward
Throwbacks	58%	42%
Percentage meeting price target	58%	39%
Surprising findings	Reversals perform better than continuations. The best performers are those with breakouts near the yearly low. Gaps help performance. Tall patterns perform better than short ones. Scallops in a rising price trend tend to get shorter and narrower. Narrow scallops take less time to reach the ultimate high than wide ones. Patterns with a rising volume trend and U-shaped volume outperform.	
See also	Cup with Handle; Head-and-Shoulders Bottoms, Complex; Rounding Bottoms	

Downward Breakouts

Appearance	Same, but breakout is downward.	
Reversal or continuation	Short-term bearish reversal	
	Bull Market	**Bear Market**
Performance rank	20 out of 21	19 out of 21
Break-even failure rate	27%	14%
Average decline	14%	19%
Change after trend ends	54%	46%
Volume trend	Upward	Upward
Pullbacks	56%	57%
Percentage meeting price target	25%	30%
Surprising findings	The best performers are those with breakouts near the yearly low. Gaps help performance. Tall patterns perform better than short ones. Scallops in a rising price trend tend to get shorter and narrower. Patterns with a rising volume trend, dome-shaped volume, and heavy breakout volume outperform.	
See also	Same as for upward breakouts	

What impresses me most about ascending scallops is how poorly they perform. I consider well-behaved patterns as those with break-even failure rates below 20%. In a bull market with a downward breakout, 27% fail to decline at least 5%. Upward breakouts perform better, but the 10% or 16% failure rate does not inspire confidence. The average rise or decline is also below par for both breakout directions.

Perhaps the only redeeming quality of ascending scallops is their ability to predict the end of the trend. Scallops get narrower and shorter, on average, when compared with prior scallops in a series. For example, in a line of three ascending scallops, the first one will be wider and taller than the last one. Also, a downward breakout from a scallop perched at the summit (the end of an upward price trend) is bearish and usually means a trend change.

Tour

Figure 41.1 shows three ascending scallops, with the first one being an especially large one. It looks like a rounding bottom except that the minor high, where the formation ends on the right (in mid-April), is well above the minor high on the left (during early December). This is typical for ascending scallops — the right

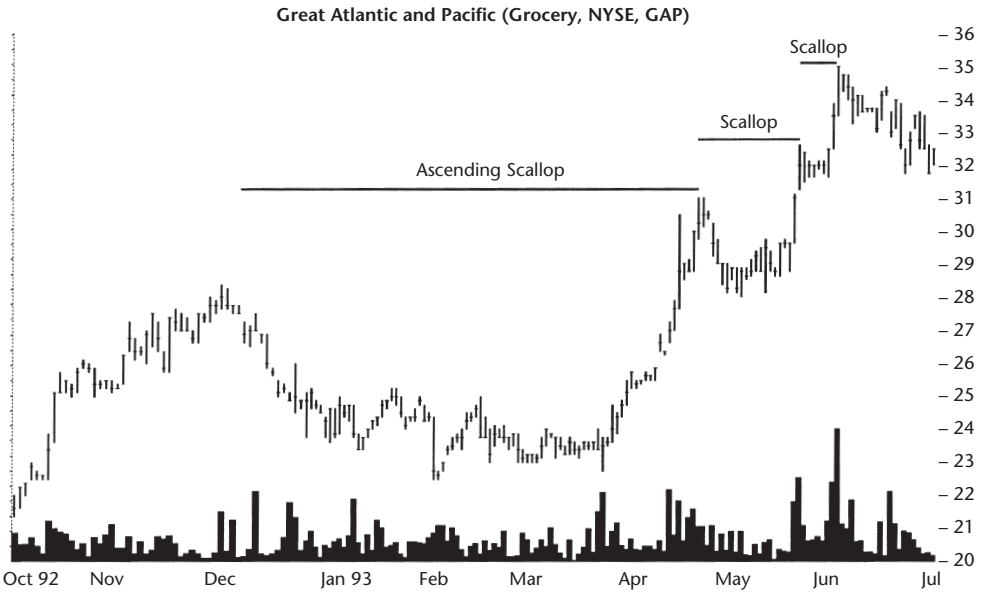


Figure 41.1 Three ascending scallops. The formation resembles the letter J.

side should be above the left. However, it is fine if the two peaks are close to each other in price. This feature often signals an end to the series of scallops and the rising price trend.

The J-shaped pattern appears on the smallest scallop in Figure 41.1. I highlight this formation with some consternation. When hunting for scallops, one should look at the price lows, not the highs. If you connect the minor lows of the first two formations, you see that prices have a bowl shape. The bowl shape is not clear in the smallest formation unless you trace along the highs.

The smallest formation in Figure 41.1 also has the best volume pattern—a U-shaped trend. This is common for ascending scallops but should not be viewed as a requirement. The first scallop does not have an easily recognizable bowl-shaped volume trend but it is there. The volume spikes are higher near the formation ends than in the center.

Identification Guidelines

Table 41.1 shows identification guidelines for ascending scallops.

Price trend. As one might guess from the pattern's name, ascending scallops appear in a rising price trend. Rarely do they occur in a declining trend. More often, the scallop will signal a trend change (from down to up) when it appears after a long downtrend.

Table 41.1
Identification Characteristics

Characteristic	Discussion
Price trend	Price should be rising leading to ascending scallops.
J shape	Look for two price peaks with a rounded recession in between and a higher right peak. Ascending scallops look like the letter J.
Volume	Ascending scallops often show a U-shaped volume trend.
Width	Scallops trend to be wider near the start of a trend than near the end, but allow variations.
Uneven ends	Scallops with price nearly the same at the end as at the beginning suggest the trend is near the end.

J shape. The pattern resembles the letter J. The peak on the left side is below the right side with a rounded recession in between. The two peaks should not be near each other in price (otherwise, you have a cup with handle, rounding turn, or even a double top chart pattern).

Volume. Volume usually resembles the price pattern: higher at the ends than in the middle. However, do not exclude a scallop with domed or other shaped volume.

Width. Wide scallops usually mark the start of a rising price trend and narrow ones appear near the end of the trend. I base this observation on the average scallop width, so sometimes you see just the opposite: a wide scallop at the end of a trend and narrower ones near the start.

Uneven ends. In a series of scallops, many times the highest scallop in the series will look like a rounding turn or double top with the start and end of the scallop sharing almost the same price. A downward breakout may follow immediately or a trend change will occur soon after. A check of the database shows that scallops with starting and ending prices near each other perform less well than do those priced farther apart.

Figure 41.2 shows two examples of ascending scallops, the first with an upward breakout and the second with a downward one. An upward breakout occurs when price closes above the highest high in the pattern (point A); a downward breakout happens when price closes below the lowest low (point B). Both patterns have dome-shaped volume, which is unusual for scallops.

The J shape of each scallop is well defined with the end far above the price at the start. Between the beginning and end is a rounded-looking recession forming the bottom of the pattern. Sometimes the turn looks irregular with a few price bars getting in the way of a curved line drawn along the valley lows, but that is fine. Use the figures in this chapter as examples of ascending scallops.

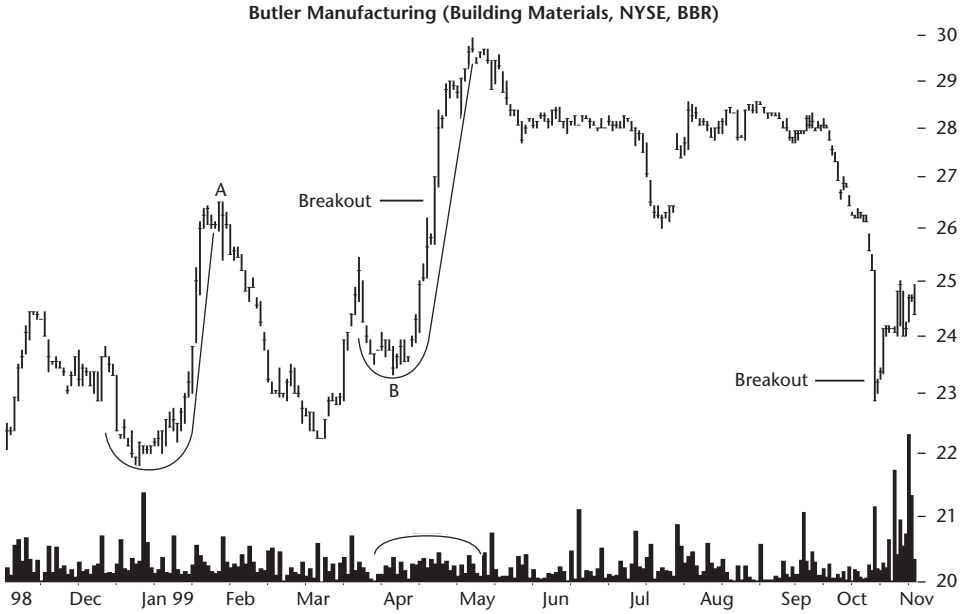


Figure 41.2 Two ascending scallops, the first with an upward breakout and the second with a downward one. Price must close above or below the scallop to stage a breakout.

Focus on Failures

Scallops suffer from what I call 5% failures. A 5% failure is when price breaks out in the intended direction but fails to continue moving in the same direction by more than 5%. Price doubles back and heads in the opposite direction, sometimes causing an investor to lose money. Figure 41.3 shows an example of failure.

There is nothing wrong with the ascending scallop in Figure 41.3 in the April–May period. Prices round up nicely and continue higher while the volume pattern is bowl-shaped if you disregard the twin spikes in early May. However, the late June formation marks the high for the stock. Again, there is really nothing wrong with the pattern. The J shape is pronounced and smooth. The volume pattern is somewhat rugged but higher on either end than in the center. The narrowness of the formation is a clue to its failure. It is about 2 weeks wide, which is quite narrow for scallops (the average width is over a month long). From the high at 19, the stock heads down in a choppy manner until the end of the study (mid-July 1996) where it is at 13.50.

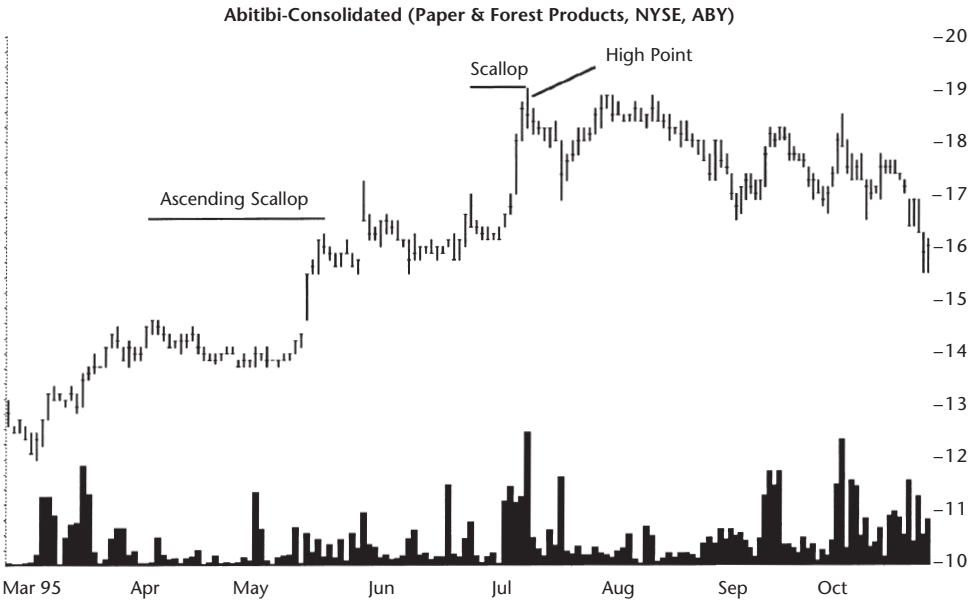


Figure 41.3 An ascending scallop failure in late June. Most scallops act as consolidations of the trend, but the narrow ascending scallop in late June marks the high for the stock.

Statistics

Table 41.2 shows general statistics for ascending scallops.

Number of formations. These patterns are plentiful. I searched data from mid-1991 to 1996 in 500 stocks, 300 stocks from 1999 to 2003, and about 100 stocks from 2000 to 2003. With 1,380 scallops located, I quit looking. Even so, I found comparatively few with downward breakouts, as you might expect.

Reversal or continuation. Scallops with upward breakouts function as continuations of the prevailing (upward) price trend. Downward breakouts act as reversals of the uptrend with a few sprinkled into a declining price trend (those act as continuations). Reversals perform better than continuations in all cases except downward breakouts in a bear market.

Average rise or decline. The average rise for both bull and bear markets is less than I hoped to see and below the usual performance for all chart pattern types. Even the downward breakout performance is below par.

Rises or declines over 45%. One bright light is that 27% of scallops climb more than 45% in a bull market. This finding suggests you should trade ascending scallops in a bull market with upward breakouts, or trade with the market trend: up in a bull market and down in a bear market.

Table 41.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	736	365	161	118
Reversal (R), continuation (C)	84 R, 652 C	53 R, 312 C	147 R, 14 C	94 R, 24 C
R/C performance	33% R, 31% C	23% R, 19% C	–14% R, –11% C	–17% R, –24% C
Average rise or decline	31%	19%	–14%	–19%
Rises or declines over 45%	198 or 27%	47 or 13%	1 or 1%	6 or 5%
Change after trend ends	–32%	–34%	54%	46%
Busted pattern performance	53%[a]	39%[a]	–27%	–33%
Standard & Poor's 500 change	12%	–4%	1%	–17%
Days to ultimate high or low	162	68	44	35

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Change after trend ends. Once price reaches the ultimate high or low, the rebound is not spectacular, especially for scallops with a downward breakout.

Busted pattern performance. The numbers suggest that if a scallop breaks out in one direction and then reverses, trade the new direction. For example, if the stock breaks out downward, drops a bit, and then recovers to close above the left scallop high (the lower of the two scallop peaks), buy the stock. Use stops to protect your profits and limit losses. Many times a small move (5% or less) in the breakout direction precedes a large rebound in the direction opposite the breakout. That, of course, is the definition of a busted pattern.

Standard & Poor's 500 change. Notice how the large up move in the S&P (12% rise) helped scallops with an upward breakout in a bull market perform (31% rise). A bear market (4% decline) held down the scallop's post-breakout price rise (19%). Downward breakouts show the same trend: A rising market (1% rise) hurt downward breakouts (14% decline) and a falling market (–17%) swept along downward breakouts (19% decline). The numbers reinforce the belief that you should trade in the direction of the prevailing market trend and avoid countertrend trades.

Days to ultimate high or low. Compare the 162 days it took scallops in a bull market to climb 31% with the 35 days in a bear market to decline 19%. Prorated, the bear market decline should have taken 99 days if it followed the same slope as in a bull market. Thus, the decline in a bear market must be steeper than the rise in a bull market. This finding is not unique to ascending scallops. It suggests that to maximize the number of trades, make full use of

Table 41.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	76 or 10%	60 or 16%	44 or 27%	17 or 14%
10	151 or 21%	122 or 33%	74 or 46%	34 or 29%
15	218 or 30%	168 or 46%	100 or 62%	52 or 44%
20	294 or 40%	209 or 57%	118 or 73%	73 or 62%
25	367 or 50%	245 or 67%	134 or 83%	83 or 70%
30	431 or 59%	267 or 73%	146 or 91%	96 or 81%
35	471 or 64%	288 or 79%	154 or 96%	104 or 88%
50	562 or 76%	327 or 90%	160 or 99%	113 or 96%
75	640 or 87%	346 or 95%	161 or 100%	118 or 100%
Over 75	736 or 100%	365 or 100%	161 or 100%	118 or 100%

short sales in a bear market. The trades will be quicker but not as profitable, and only seasoned traders should attempt them.

Table 41.3 shows failure rates for ascending scallops. The rates are higher than those for many other chart patterns. Consider that 27% of the scallops in a bull market with downward breakouts decline less than 5% after the breakout. Nearly half (46%) drop less than 10%. Clearly, you want to avoid trading against the market trend.

Notice how the failure rates climb. They double for moves from 5% to 10% in most cases. They climb by half for moves from 10% to 15%. Let me give you an example. Scallops in a bull market with upward breakouts have 10% failing to rise more than 5%. The failures double to 21% for rises of just 10% and the failure rate climbs to 30% for moves under 15%. That failure rate (30%) is triple the break-even rate of 10%.

The best performance comes from scallops that trade with the market trend: upward breakouts in a bull market and downward breakouts in a bear market. They have the lowest failure rates. Scallops in a bear market with upward breakouts do better for larger moves than those with downward breakouts. That is, after a 15% move, the failure rates for upward breakouts are lower than are those for downward breakouts.

Table 41.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. Prices take over a month to close above the scallop's high and 2 months to drop below the scallop's low, on average. For upward breakouts, this is the time price forms a handle on the J pattern, so it resembles a kitchen ladle, one that a chef hooks onto a wire for easy access. In some cases, the retrace may take prices well below the scallop's top but remain above the bottom of the scallop (otherwise, it would breakout downward).

Table 41.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	42 days	34 days	61 days	63 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L4%, C14%, H82%	L6%, C24%, H70%	L23%, C50%, H27%	L48%, C43%, H8%
Percentage rise/decline for each 12-month lookback period	L40%[a], C30%, H32%	L22%[a], C21%, H19%	L15%, C13%, H15%	L22%, C17%, H13%[a]
Throwbacks/pullbacks	58%	42%	56%	57%
Average time to throwback/ pullback ends	9 days	8 days	10 days	9 days
Average rise/decline for patterns with throwback/pullback	30%	20%	14%	18%
Average rise/decline for patterns without throwback/pullback	33%	19%	14%	20%
Performance with breakout gap	34%	21%	15%	20%[a]
Performance without breakout gap	31%	19%	14%	18%
Average gap size	$0.43	$0.34	$0.24	$1.20

[a]Fewer than 30 samples.

Yearly position. Scallops with upward breakouts usually form near the yearly high (as measured by the breakout). For downward breakouts, the pattern occurs most often in the middle of the yearly price range or, in the case of bear markets, near the yearly low.

Yearly position, performance. The best performance comes from scallops near the yearly low, if you trust the low sample count results.

Throwbacks and pullbacks. Throwbacks and pullbacks happen about half the time. When they do occur, it takes between 8 and 10 days for price to return to the breakout price. Sometimes, a throwback hurts performance when the breakout is in line with the market trend. Look for nearby underlying support or overhead resistance before selecting scallops to trade. The risk with a throwback or pullback is that price will continue moving in the direction opposite the breakout and you will suffer a loss. Avoid throwbacks and pullbacks by checking for support and resistance before trading.

Gaps. Performance improves for scallops showing a gap on the breakout day. In all cases, the performance difference is small.

Table 41.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	23%	8%	7%	7%	5%	5%	3%	4%	2%	2%	33%
Bull market, up breakout	15%	6%	3%	4%	2%	4%	3%	4%	3%	3%	52%
Bear market, down breakout	35%	15%	6%	7%	6%	3%	4%	2%	2%	3%	18%
Bull market, down breakout	35%	9%	7%	6%	8%	5%	6%	2%	1%	0%	20%

Table 41.5 shows a frequency distribution of time to the ultimate high or low. Notice how quickly many scallops reach the ultimate high or low. For example, half of the scallops in a bear market with downward breakouts reach the ultimate low in 2 weeks or less. This statistic compares to just 21% topping out in a bull market. At the other end of the scale, half of the bull market patterns are still searching for the ultimate high after more than 2 months.

The table gives you some idea of how long your trade may take, given the varying market conditions and breakout directions. It suggests patience in a bull market (upward breakout) and hair triggers for downward breakouts (35% reach the ultimate low in week 1).

Notice the slight rise (to 8%) for scallops with downward breakouts in a bull market at day 35. I have seen other chart patterns flame out a month after the trade, so be prepared to close out your position then if weakness appears.

Table 41.6 shows statistics related to size.

Height. Tall patterns outperform short ones in all market conditions and breakout directions. Size is an important tool to gauge likely postbreakout performance. Measure the height from the highest high to the lowest low in the scallop and then divide by the breakout price (which is either the highest high or lowest low in the scallop). If the result is higher than the median, then you have a tall scallop.

Width. Performance tracks the market trend: Wide patterns do better when the trade follows the market direction (upward in a bull market and downward in a bear market). Narrow scallops do better when the breakout direction is against the market tide. I used the median length as the separator between wide and narrow.

Average formation length. The average scallop length is near 40 days with scallops in a bull market with upward breakouts showing a substantially longer average (53 days).

Table 41.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	34%	23%	16%	20%
Short pattern performance	29%	17%	12%	18%
Median height as a percentage of breakout price	19.77%	22.67%	21.47%	25.47%
Narrow pattern performance	30%	20%	16%	18%
Wide pattern performance	33%	18%	12%	19%
Median length	39 days	35 days	34 days	31 days
Average formation length	53 days	40 days	42 days	40 days
Short and narrow performance	29%	18%	13%	15%
Short and wide performance	30%	15%	11%	20%[a]
Tall and wide performance	35%	21%	13%	18%
Tall and narrow performance	33%	24%	21%	23%[a]
Average width (days) of first through third scallop in a series	54, 56, 49	41, 37, 37	47, 35, 43	40, 42, 31
Average height of first through third scallop in series as percentage of breakout price	22%, 20%, 19%	23%, 23%, 22%	19%, 17%, 19%	25%, 21%, 17%
Narrow scallops: days to ultimate high or low	147	66	48	31
Wide scallops: days to ultimate high or low	176	70	40	40

[a]Fewer than 30 samples.

Height and width combinations. The combination of height and width usually follows the individual results except for scallops in a bear market with downward breakouts. Those do best when the scallop is both tall and narrow. Avoid trading short scallops.

Series width and height. I looked at consecutive scallops in a rising price trend and found that they tended to get narrower and shorter the higher up the price trend they appeared. Figures 41.1 and 41.3 show this feature. I have seen scallops get wider as they climb, so the findings vary from stock to stock. If you see a scallop appear after a long uptrend and it seems *unusually wide or narrow*, the end of the trend may be near. Consider looking elsewhere for a more promising trade. What does *unusually wide or narrow* mean? Use the average and

median lengths in Table 41.6 and the figures in this chapter as guides. Since scallops are plentiful, search for them in the stock you intend to trade and in other stocks in the same industry to get a better feel for scallop width.

Scallop width and time. I used the median width as the separator between narrow and wide and then mapped the time to the ultimate high. I found that narrow scallops took less time (usually) to reach the ultimate move than wide scallops. The exception is for scallops in a bull market with downward breakouts. Narrow scallops took 8 days longer to reach the ultimate low.

Table 41.7 shows volume-related statistics.

Volume trend. Scallops perform better in a rising volume trend. In most cases, the performance difference is small, so do not let the volume trend overrule a promising trade. Still, if you find two scallops of equal worth, trade the one with a rising volume trend.

Volume shapes. Scallops with upward breakouts and U-shaped volume perform best. Scallops with downward breakouts perform better when volume is dome shaped.

Breakout volume. Heavy breakout volume usually propels a stock farther than a breakout on weak volume, according to the performance numbers in Table 41.7. I used the 30-day average (leading to, but not including the breakout) as the separator between heavy and light.

Table 41.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	32%	20%	14%	19%
Falling volume trend performance	30%	16%	13%	17%
U-shaped volume pattern performance	32%	20%	12%	18%
Dome-shaped volume pattern performance	30%	19%	17%	20%
Neither U-shaped nor dome-shaped volume pattern performance	29%	14%[a]	4%[a]	12%[a]
Heavy breakout volume performance	33%	19%	15%	19%
Light breakout volume performance	28%	19%	12%	18%[a]

[a]Fewer than 30 samples.

Trading Tactics

Table 41.8 shows trading tactics for ascending scallops.

Measure rule. The first trading tactic is to determine how far prices are likely to move once the formation completes. This gauge is called the measure rule because it involves measuring the formation height and applying it to the breakout point.

Subtract the lowest low reached in the bowl from the high reached on the right side of the formation. Once you have the height, add the value to the highest high on the right side (upward breakouts) or subtract it from the lowest low (downward breakouts). The result is the minimum expected price target. An example makes the calculation clear. Consider the ascending scallop that forms during late September as shown in Figure 41.4. Apply the measure rule to this formation by subtracting the formation base from the right side high. Point B shows the base low at 12.50 and the right side high, point A, is 16. The difference of 3.50 is the formation height. Add the difference to the right-side high (point A) to get the target price of 19.50. Prices meet the target in late April (not shown on the chart). If the scallop breaks out downward, then subtract the difference from the formation low (point B) to get the target price. In such a case, the target would be 9 (12.50–3.50).

Handle. Once a scallop completes, prices decline. They retrace all or a part of their gains (that is, from the right-edge high to the bowl low) before heading higher (upward breakouts) or continuing down (downward breakouts). In Figure 41.4, you can see that the retrace after the first scallop brings prices down to the height of the left scallop lip at 14.25. The retrace after the November scallop sees prices return to near the bowl low.

Buy point. Once prices crest on the right side and begin declining, wait for the decline to end. In some cases, another scallop will form and it will be relatively easy to buy during formation of the bowl.

Stops. Stop-loss points should be $0.15 beyond the support or resistance level. In Figure 41.4 place a stop-loss order at 12.35, or 0.15 below the formation

Table 41.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute the height of the scallop by taking the difference between the right-edge high to the lowest low in the formation. For upward breakouts, add the difference to the highest right-edge high. For downward breakouts, subtract the difference from the lowest low. The result is the minimum expected price target.
Handle	Once prices crest the right lip high, they fall. If they drop below the bottom of the formation, then the breakout is downward.
Buy point	Take a position in the stock once prices drift below the right-edge high and bottom out.
Stops	$0.15 below the lowest low.

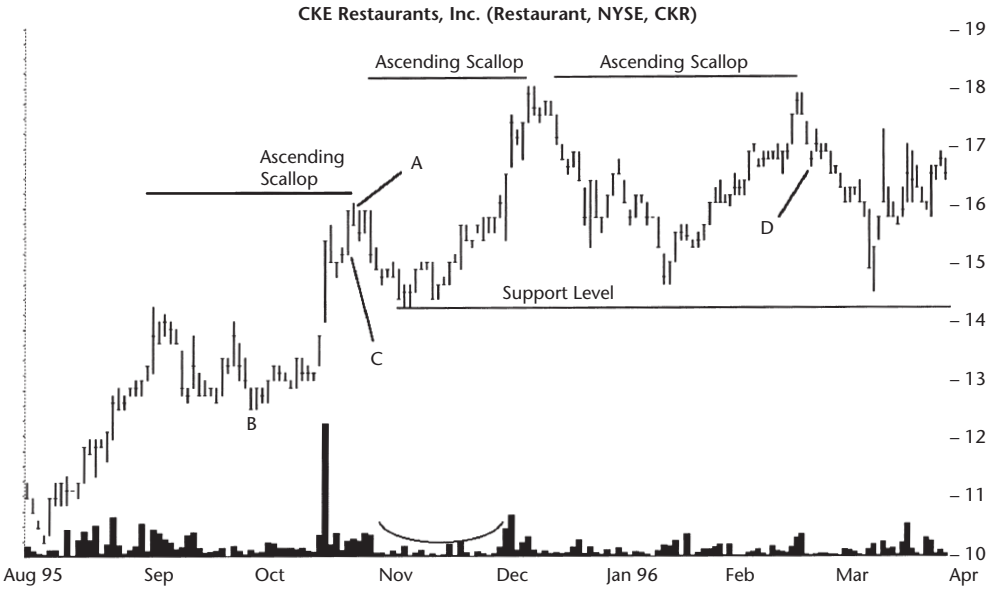


Figure 41.4 Three consecutive ascending scallop formations. As described in the Sample Trade, Kristy bought the stock at point C once prices rose above the top of the ascending scallop. The last scallop has a V-shaped bowl and a right rim that almost makes it to the high of the left side. She sold at point D.

low (point B) for the first scallop. If the loss from the purchase point is too large, consider moving the stop to just below the left peak. As you can see in Figure 41.4, the left peak is an area of support, but support varies from formation to formation.

Sample Trade

Kristy was intrigued by the scallop formation shown on the left in Figure 41.4. The V-shaped look to the bowl concerned her as did the falling volume trend. But she liked the prospects for the restaurant company and her fundamental analysis was thorough and tasty.

Before she bought the stock at point C, she computed the estimated gain and compared it to the risk of a loss. The targeted rise was to 18.75 (she calculated using the right-side peak 3 days earlier). The risk point was 14, the high of the left side and a massive support area reached in early 1994. At her purchase point of 15.25, the risk was 1.25 (15.25–14) and the potential reward was 3.50 (18.75–15.25). The nearly three-to-one ratio was high enough to risk a trade.

She felt gratified when prices closed at the high for the day, suggesting prices the following day would move higher still. When she looked at the stock the next day, prices did reach a new high but closed lower. As she posted her daily quotes for the stock, the declining price trend over the next week or two worried her, but not unduly so. Kristy recognized the rounding turn of another scallop forming and saw that her stop held.

Day by day she followed the stock and did not like the third scallop in the series (the rightmost one). The bowl shape was irregular with an unconvincing volume pattern. When prices stopped at the old high before collapsing, she knew the rise was at an end. She pulled the plug on the operation at 16.75, shown as point D in the figure, when price pierced an up trend line from the bowl low (not shown).

In the short term, Kristy was right in that prices headed lower. They moved down until reaching the low of the bowl but then rebounded. By mid-June, they had nearly doubled, reaching a high of 28.75, 10 points above the target price of 18.75. Still, on her 1,000 shares, she cleared almost $1,500 on the trade.

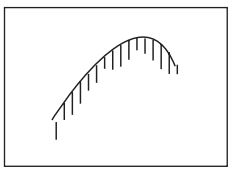
For Best Performance

The following list includes tips and observations to help select ascending scallops that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection. Avoid unusually wide or narrow scallops and scallops with peaks near the same price—Table 41.1.
- Trade in the direction of the market: upward in bull markets, downward in bear ones—Table 41.2.
- Trade reversals except in a bear market with a downward breakout—Table 41.2.
- The lowest failure rates accompany scallops with upward breakouts in a bull market—Table 41.3.
- Select scallops with breakouts within a third of the yearly low—Table 41.4.
- Breakout day gaps help performance—Table 41.4.
- Be prepared to take profits quickly after a downward breakout—Table 41.5.
- Choose tall patterns—Table 41.6.
- Consecutive scallops get narrower and shorter as the trend end approaches—Table 41.6.
- Narrow scallops usually take less time to reach the ultimate high—Table 41.6.
- Pick scallops with a rising volume trend—Table 41.7.
- Choose scallops with U-shaped volume (upward breakouts) or dome-shaped volume (downward breakouts)—Table 41.7.
- Select scallops with above average breakout volume—Table 41.7.

42

Scallops, Ascending and Inverted



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Looks like a backward and upside-down J, or the right half of an umbrella.	
Reversal or continuation	Short-term bullish continuation	
	Bull Market	**Bear Market**
Performance rank	3 out of 23	7 out of 19
Break-even failure rate	4%	7%
Average rise	43%	26%
Change after trend ends	–32%	–33%
Volume trend	Downward	Downward
Throwbacks	61%	65%
Percentage meeting price target	61%	55%
Surprising findings	Reversals perform better than continuations. Patterns with breakouts near the yearly low perform best. Throwbacks hurt performance. Tall patterns perform better than short ones. Scallop width and height decreases in a series of ascending scallops. Wide scallops take longer to reach the ultimate high after the breakout.	

The ascending and inverted scallop is a pattern I discovered a few years ago. I then wondered whether ascending and descending scallops had inverted counterparts and what they might look like. It did not take long before I discovered the inverted and ascending variety. I thought it showed great promise and studied it briefly before setting it aside. This chapter takes a closer look at the pattern's performance and explores its many surprises.

The formation looks like a backward and upside-down J or the right half of an open umbrella. The breakeven failure rate is low, 4% in bull markets, and 7% in bear markets, but climbs quickly. The average postbreakout rise is 43% in bull markets and 26% in bear markets, both numbers are very good.

As noted in the Results Snapshot, a number of surprises occur with this pattern. I will discuss them in detail later in the chapter.

Tour

What does an ascending and inverted scallop look like? Figure 42.1 shows two examples. Notice that the long-term price trend is upward, starting in the fall of 1996 and climbing in a stair-step pattern until February, and then declining leading to the scallop.

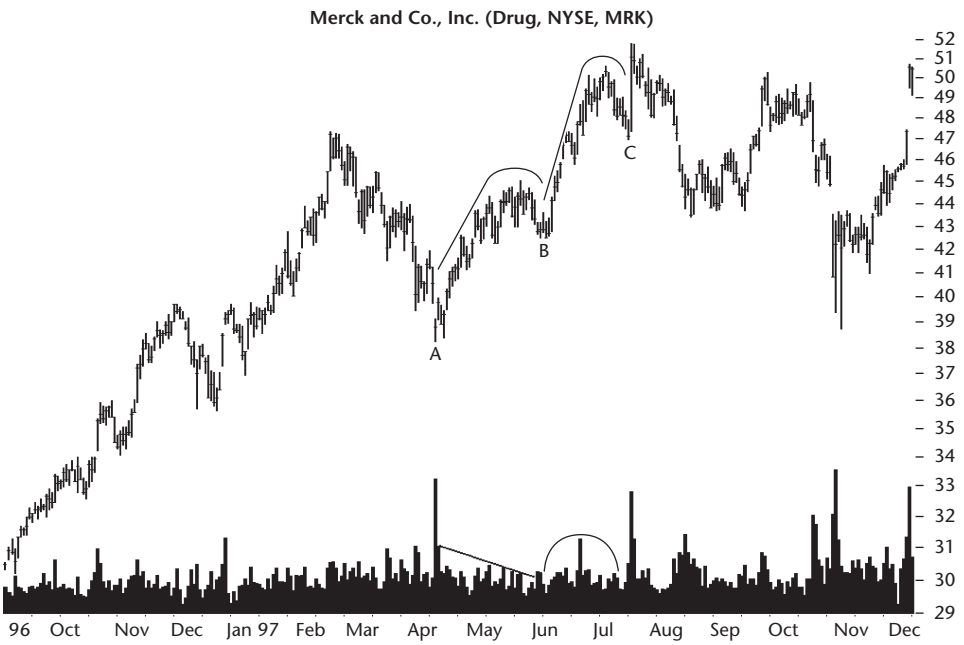


Figure 42.1 After a long-term uptrend, prices retrace and then form the first scallop starting at point A and ending at point B. The second scallop begins at B and ends at C. Note that the horizontal distance from A to B is wider than B to C. This difference is typical for multiple scallops in a single uptrend.

The first scallop begins at point A and ends at B, both minor lows that mark changes in the short-term price trend. The volume trend is unremarkable, except for a slight downward tilt. The second scallop starts at B and ends at C. The volume trend of this scallop is dome shaped as shown.

Both scallops start with an uphill price run that is usually straight but rounds over at the top. I like to see a rounded top, but a nubbin or two sticking out is fine. Sometimes the rounded shape appears not as a line connecting the high prices, but the low prices. The key is that is looks like the right half of an umbrella or an upside down and backward J, tilted to one side.

Identification Guidelines

After manually searching though hundreds of inverted scallops, I developed identification guidelines, which appear in Table 42.1.

Daily chart. I used the daily chart to find the pattern, but I am sure they come out like worms after a heavy rain on most any time scale. The longer ones appear on the weekly chart, but I did not check the intraday chart to see what they looked like or how they perform.

Upward price trend. I selected scallops from a rising price trend. You do not see them appear in a downtrend (because they do not confirm) except at bullish turning points. The turning point may be the start of a new upward trend, but, more likely, it is the corrective phase of a measured move down. In other words, prices decline and then stop where the inverted scallop forms.

Table 42.1
Identification Characteristics

Characteristic	Discussion
Daily chart	Use the daily chart to find the pattern, although the larger ones also appear on the weekly charts.
Upward price trend	Select patterns that appear in an upward price trend or at the bullish turning point of a downward price trend.
Inverted and backward J shape	Prices trend up then round over at the top, forming an inverted and backward J. It also looks like the right half of an umbrella.
Smooth top	Look for daily high prices that, when connected, form a smooth turn. Larger patterns may not be as smooth because you are connecting minor highs.
Retrace	The rounded top portion of the pattern usually retraces about 50% of the prior up move. Prices must not drop below the pattern start.
Confirmation price	Price must close above the highest high in the pattern. Only then is the pattern valid.

The pattern confirms and prices move somewhat higher before resuming the second down leg. Figure 42.4 shows an example of this movement.

For best performance in a bull market, select those scallops in an established upward price trend. For bear markets, whether you select a scallop that acts as a reversal or continuation of the price trend does not matter because both perform just as bad.

Inverted and backward J shape. Look at Figure 42.2 for an example. Prices move up smartly at the pattern's start in late October and then round over at the top of the pattern. The pattern looks like the letter J flipped upside down and to the side.

Smooth top. I ignored those patterns with a sharp or pointed top, but did allow a few that had a one-day tail shooting out the top. They reminded me of a single tree on a hilltop. As long as the hilltop looks smooth, then your selection is fine. Sometimes, the daily low price and not the daily high appears smoother. You can see this situation in Figure 42.2. Two short trees peak out the hilltop and the pattern would appear better if a logger came along and harvested them. If you connect the low prices, the turn is smoother than if you connect the high prices.

Retrace. The pattern begins at point A, tops out at B, and retraces to end at C. The average retrace from B to C when compared to the AB length is 50%. This retrace amount varies widely but in no case must the low at C drop below A. If it does, then look for another scallop.

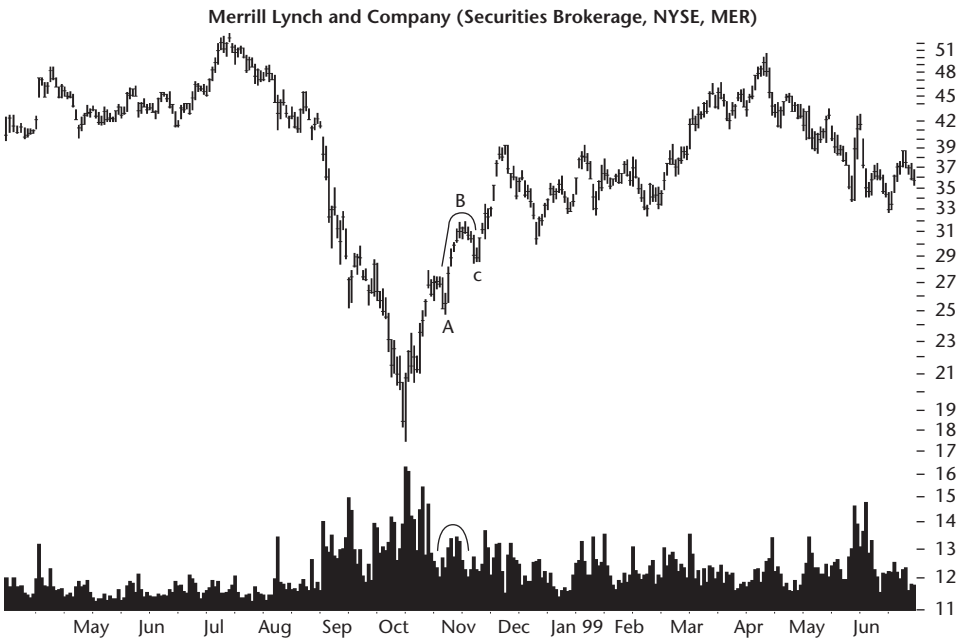


Figure 42.2 This scallop appears rounder if you connect the low prices instead of the high prices. Scallops with domed-shaped volume give good performance.

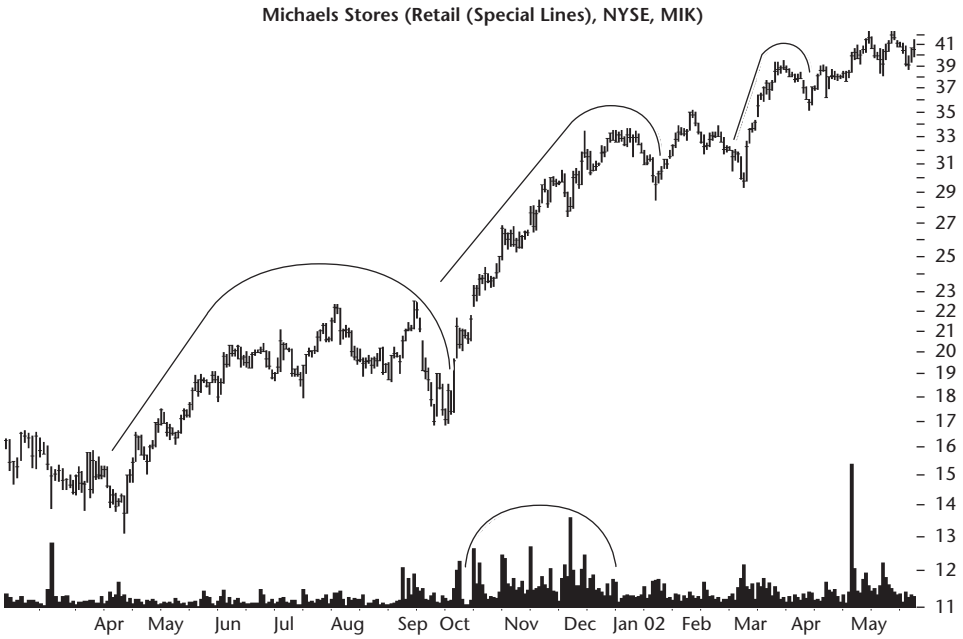


Figure 42.3 For many volume shapes, the volume pattern does not align perfectly with the scallop's start and end. This dome-shaped volume ends before the pattern completes.

Confirmation price. Always wait for confirmation, that is, for price to *close* above the pattern high. Only then does the pattern become a valid scallop.

Figure 42.3 shows an example of domed-shaped volume from October to December that starts when the middle scallop begins, but finishes before the scallop ends. This action is typical and should not influence pattern identification.

I included this picture because the width of the three inverted and ascending scallops narrows as prices climb. Such narrowing gives a trader a clue to the trend end. If you see a narrow scallop forming, consider whether the upward trend is due to reverse and trade accordingly. This stock climbed to 46 in mid-June 2002 before tumbling to almost 30 in July (not shown).

Focus on Failures

What goes wrong with the pattern? Most of the problems deal with selecting patterns incorrectly. Identification is never easy until you become acquainted with the pattern, so here are two scenarios to look for. The first, shown in Figure 42.4, is selecting a pattern in a downtrend.

If you are lucky, your pattern will confirm and prices will rise in a long-term bull trend. More likely, though, is to get a lemon like that shown in the figure. Prices are falling going into the pattern, then reverse and the scallop builds. Price confirms the validity of the scallop when it closes above the highest high

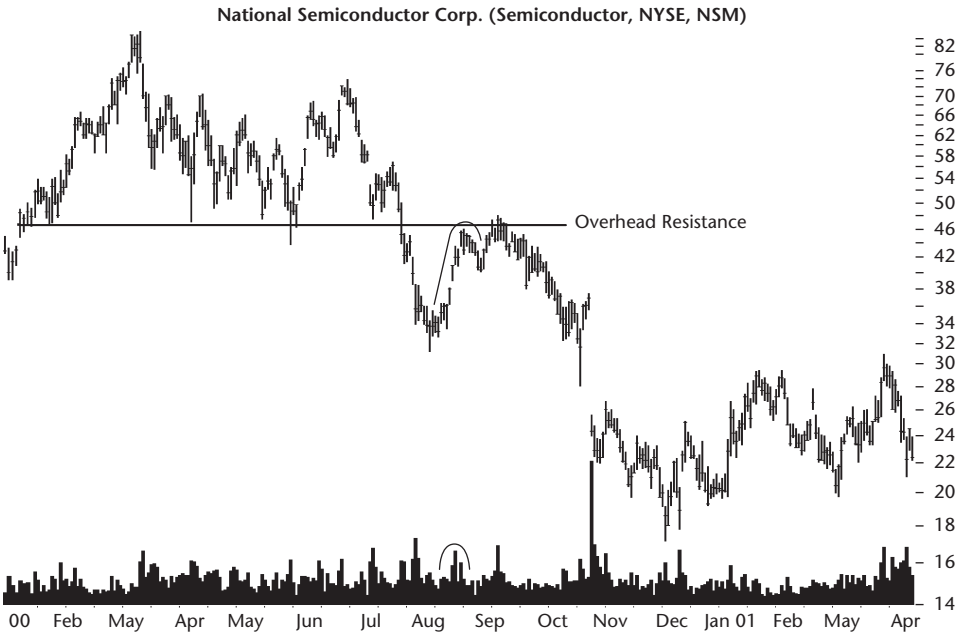


Figure 42.4 This is a valid pattern because it confirms, but the bearish trend should give a trader pause. Coupled with overhead resistance, this trade was a nonstarter.

in the pattern. Unfortunately, the market downdraft sucks prices lower, and with overhead resistance, this trade is doomed from the start.

The lessons from this chart are two: First, watch the prevailing price trend. Select patterns in a rising price trend and avoid those in a downtrend. Second, always search for support and resistance zones before investing. Those chart patterns are the most important as they help you gauge the expected price move in either direction. My book, *Trading Classic Chart Patterns* (Wiley 2002) gives a good tutorial on support and resistance and includes performance statistics.

Figure 42.5 shows the second type of failure. Two of the three patterns are valid ascending and inverted scallops. Which one is the dud? You might guess the first one, and I admit the top looks more like a flat rectangle than a rounded scallop. The variation in patterns is so wide that you have to be flexible; you can always ignore the questionable ones and trade the sure things.

The middle pattern has a top that looks like a symmetrical triangle. The last and highest scallop has no rounded turn to speak of. If you ignore the upsloping top, the highest pattern is the dud because it does not confirm. Prices drop below the lowest low in the pattern before closing above the pattern's high. If price does not *close* above the highest high before dropping below the pattern's start, then it is not an inverted scallop. The other two patterns are strange looking but fine as inverted scallops.

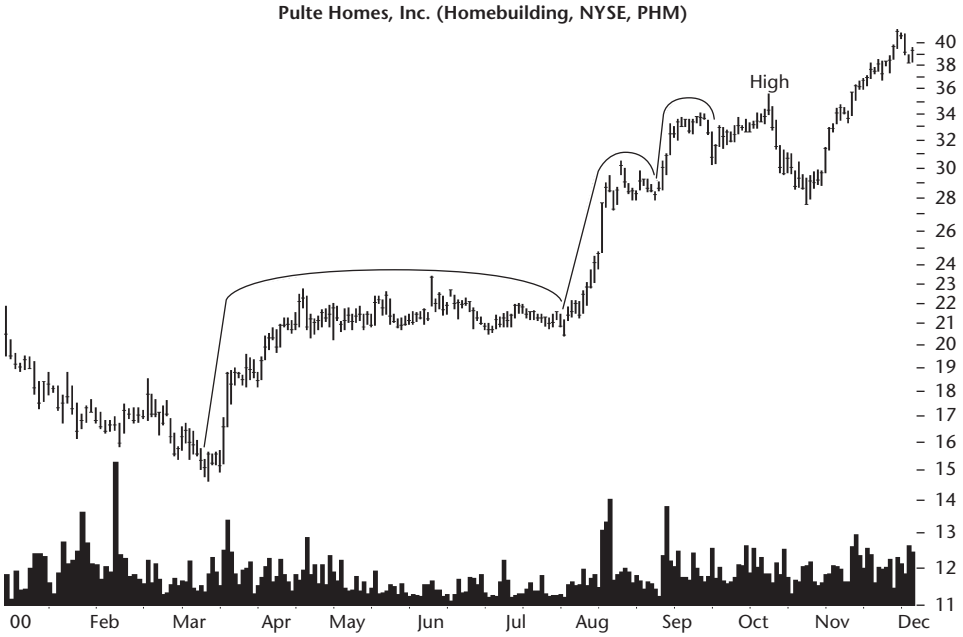


Figure 42.5 What is wrong with the highest scallop? The pattern never confirms before prices drop below the pattern low.

Statistics

Table 42.2 shows general statistics for the ascending and inverted scallop.

Number of formations. Since I found 535 chart patterns in over 200 stocks from both bull and bear markets, I felt no need to search for more. The first pattern I found appeared in late 1994 and the last in mid-2003, but most were from mid-1996 onward. Splitting the samples into bull and bear markets gives the numbers shown in the table.

Reversal or continuation. Most scallops behaved as continuations of the prevailing price trend. About a quarter (27% in a bull market and 25% in a bear market) acted as reversals. Scallops acting as reversals performed better than did those acting as continuations, especially in a bull market.

Average rise. The ascending and inverted scallop is a bullish pattern. Perhaps the average rise supports the "rising tide lifts all boats" theory. In a bull market, the average rise was 43%. In a bear market, the rise was 26%. Both are above the averages for bullish chart patterns of other types.

Rises over 45%. Measuring the rises over 45% is a statement of how well the pattern can perform. In bull markets, over a third (39%) of the inverted scallops climbed more than 45% after the breakout. Just 21% of the scallops in a bear market climbed as far.

Table 42.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	357	178
Reversal (R), continuation (C)	104 R, 253 C	49 R, 129 C
R/C performance	47% R, 41% C	27% R, 26% C
Average rise	43%	26%
Rises over 45%	141 or 39%	38 or 21%
Change after trend ends	–32%	–33%
Busted pattern performance	–29%[a]	–28%[a]
Standard & Poor's 500 change	18%	–2%
Days to ultimate high	137	104

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Change after trend ends. After prices reach the ultimate high, they tumble, but how far? In both bull and bear markets, the decline measures about 33%. The decline chews through any profit made from trading the pattern in a bear market and then some.

Busted pattern performance. Scallops that rise less than 5% follow by declining nearly 30%. If you are a seasoned trader, you can trade busted patterns by shorting them once the new direction confirms. I suggest waiting for a close below the right valley floor. Waiting will cut into the average decline, but the pattern is more likely to begin a sustained downhill run.

Standard & Poor's 500 change. In a bull market, the S&P 500 index climbed an average of 18%. This figure compares to an average rise of 43% for inverted scallops over the same period. The strongly bullish market may be responsible for the large average rise for scallops. In a bear market, the index declined 2% compared with a rise of 26% for inverted scallops.

Days to ultimate high. How long did it take prices to reach the ultimate high? In a bull market, the climb was 4.5 months long (137 days). In a bear market, the climb averaged 3.5 months (104 days). If you crunch the numbers, the rise in a bear market is at a lower slope (less steep) than in a bull market, as one might expect.

Table 42.3 shows failure rates for ascending and inverted scallops displayed as a frequency distribution of gains. For example, if your cost of trading is 5%, what I call the break-even failure rate, how many scallops fail to rise at least that far? Answer: 4%, in a bull market and 7% in a bear market. How many failed to rise over 50%? Two out of three patterns (65%) in a bull market failed to rise that far, and a massive 83% were cut from the team in a bear market. Since the pattern fails less often in a bull market, avoid trading it in a bear market.

Like other chart patterns, notice how the failure rate starts small and rises quickly. In a bear market, it doubles from 7% to 15% and doubles again, to

Table 42.3
Failure Rates

Maximum Price Rise (%)	Bull Market	Bear Market
5 (breakeven)	13 or 4%	12 or 7%
10	58 or 16%	27 or 15%
15	92 or 26%	56 or 31%
20	112 or 31%	69 or 39%
25	133 or 37%	98 or 55%
30	157 or 44%	112 or 63%
35	179 or 50%	124 or 70%
50	231 or 65%	147 or 83%
75	284 or 80%	165 or 93%
Over 75	357 or 100%	178 or 100%

31%, for price rises of 5%, 10%, and 15%. This dramatic increase is typical for chart patterns. The key is to find a chart pattern with a low break-even failure rate and high average rise. That way, you stand a better chance of making a profit at lower risk.

Table 42.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. It takes about 3 weeks for prices to climb above the top of the scallop and stage a breakout. In Figure 42.2, that is the average time it takes price to climb from C to the level of B after the patterns ends.

Table 42.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	26 days	21 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L7%[a], C21%, H72%	L3%, C22%, H75%
Percentage rise/decline for each 12-month lookback period	L47%[a], C39%, H43%	L29%[a], C29%, H25%
Throwbacks	61%	65%
Average time to throwback ends	10 days	9 days
Average rise for patterns with throwback	39%	23%
Average rise for patterns without throwback	49%	33%
Performance with breakout gap	45%	24%
Performance without breakout gap	42%	27%
Average gap size	$0.36	$0.47

[a]Fewer than 30 samples.

Yearly position. Separating the breakout price into the yearly price range gave some interesting results. Most of the patterns break out within a third of the yearly high. Few show breakouts near the yearly low.

Yearly position, performance. The best performance comes from scallops breaking out near the yearly low in both bull and bear markets. However, with just 32 patterns out of 535 qualifying, the chance of finding one buried down there is rare.

Throwbacks. Throwbacks occur in nearly two-thirds of the trades. When they do occur, it takes a stock between 9 and 10 days, on average, to return to the breakout price. When a scallop throws back, performance suffers. For example, when a throwback occurs after the breakout from a scallop in a bull market, the average postbreakout rise is 39%. Without a throwback, the rise averages 49%.

Gaps. Breakout day gaps improve performance in a bull market, but hurt it in a bear market. The average gap size is small, ranging from 36 to 47 cents. For some reason, gaps in a bear market are usually larger.

Table 42.5 shows a frequency distribution of time to the ultimate high. Notice the number of scallops topping out over 2.5 months after the breakout (70 days).

The numbers suggest that if your trade survives the first week, then be patient. It may take several months for price to reach its highest high. Notice the bump 28 days and 49 days after the breakout in a bear market. Your pattern may top out then, so watch the trade carefully.

Table 42.6 shows size-related statistics for ascending and inverted scallops.

Height. For most chart patterns, including this one, pattern height is the single best clue to performance. The taller the pattern, the better the postbreakout performance.

Width. Narrow patterns perform significantly better in a bull market, but marginally underperform in a bear market. I used the median length to determine whether a scallop was narrow or wide.

Average formation length. The average scallop length was about 6 to 7 weeks long.

Height and width combinations. The best performance comes from inverted scallops that are both tall and narrow in a bull market and both tall and wide in a bear market. These results follow the individual characteristics of height and width.

Table 42.5
Frequency Distribution of Days to Ultimate High

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	14%	5%	3%	6%	4%	3%	6%	3%	3%	2%	49%
Bull market	10%	7%	4%	4%	3%	5%	4%	1%	5%	5%	52%

Table 42.6
Size Statistics

Description	Bull Market	Bear Market
Tall pattern performance	46%	29%
Short pattern performance	41%	24%
Median height as a percentage of breakout price	22.51%	21.14%
Narrow pattern performance	47%	26%
Wide pattern performance	38%	27%
Median length	34 days	29 days
Average formation length	49 days	43 days
Short and narrow performance	44%	27%
Short and wide performance	35%	19%
Tall and wide performance	40%	31%
Tall and narrow performance	56%	23%
Average width (days) of first through third scallop in a series	51, 47, 46	47, 31, 33
Average height of first through third scallop in series as percentage of breakout price	25%, 24%, 24%	25%, 21%, 19%
Narrow scallops: days to ultimate high	130	85
Wide scallops: days to ultimate high	144	124

Series width. Figures 42.3 and 42.5 show examples of how scallops get narrower as they appear in a rising price trend. This narrowing is not true of all inverted scallops in a single uptrend, but beware of investing in a narrow scallop as it may signal a coming trend change.

In a bull market, the average width from formation start to end shrinks from 51 days for the lowest scallop in the chain to 46 days for the highest. Bear markets show a similar trend, but the third scallop, at 33 days wide, is based on just nine patterns.

Series height. Does scallop height change as it appears in a rising price trend? Yes, it gets shorter. I measured the height from the highest high to the lowest low in the pattern and divided the result by the breakout price (the highest high in the pattern). The bear market shows the best results. The average height of the lowest scallop was 25%. The second scallop height measured 21% and the highest one in the price chain measured 19%.

Scallop width and time. I compared each scallop to determine whether it was narrower or wider than the median and then computed the average days to the ultimate high. Table 42.6 shows that narrow scallops take less time to reach the ultimate high than do wide ones.

Table 42.7
Volume Statistics

Description	Bull Market	Bear Market
Rising volume trend performance	48%	25%
Falling volume trend performance	40%	27%
U-shaped volume pattern performance	43%	26%
Dome-shaped volume pattern performance	43%	27%
Neither U-shaped nor dome-shaped volume pattern performance	43%[a]	19%[a]
Heavy breakout volume performance	44%	26%
Light breakout volume performance	38%	27%

[a]Fewer than 30 samples.

Table 42.7 shows statistics related to volume.

Volume trend. In a bull market, scallops with a rising volume trend outperform, but in a bear market, the performance is better for those scallops with a falling volume trend.

Volume shapes. Figure 42.5 (the widest scallop) shows an example of U-shaped volume and Figures 42.2, 42.3, 42.4, and 42.5 (the August scallop only) show a domed shape. A random pattern appears in the April to June pattern in Figure 42.1 and the April to September 2001 pattern in Figure 42.3.

For scallops in a bull market, there is no performance difference between the pattern shapes, as Table 42.7 shows. Bear market scallops do best with dome-shaped volume.

Breakout volume. In a bull market, heavy breakout volume tends to push prices farther. In a bear market, the breakout volume has little effect.

Trading Tactics

Table 42.8 shows trading tactics for ascending and inverted scallops.

Search for nearby support and resistance. Underlying support protects your position in case the trade goes wrong. If prices close below the right pattern low, sell (below point B in Figure 42.6). The Sample Trade discusses trend-line support, but you should also look for other types of support.

Overhead resistance is one of the main reasons I avoid a trade. If there is a solid block of prices forming a ceiling on the trade, I will look for another situation with better prospects.

Identification. Are you sure you have a valid ascending and inverted scallop? Review Table 42.1 for identification tips. Select scallops in an established, rising price trend and do not try to catch a reversal (those at the end of a downtrend). In a bear market, the reversal is likely to turn into the corrective phase of a measured move down, with prices tumbling after you buy.

Table 42.8
Trading Tactics

Trading Tactic	Explanation
Search for nearby support and resistance	Trend lines, chart pattern boundaries, minor highs and minor lows, round numbers, and horizontal consolidation regions all contribute to support and resistance zones.
Identification	Do you have a valid pattern? See Table 42.1 for identification tips.
Measure rule	Used to predict a target price. Take the difference between the scallop's high and low. Add this difference to the scallop's high. The result is the target price.
Wait for confirmation	Buy only after price closes above the formation high.

Measure rule. Use the measure rule to predict how far prices might climb. Figure 42.6 shows an example. Compute the formation height by subtracting the scallop low (point A) from its high (E). Add the difference to the high (E) to get the target price. In this example, the pattern low is at 3.27, and the high is at 4.61. The difference between the high and low gives the pattern height, or 1.34. Add this result to the high to get the target: 5.95. Prices climb to that point in mid-March.

Let me warn you that the measure rule works only 61% of the time in bull markets and 55% of the time in bear markets. I like to see values of 80% or

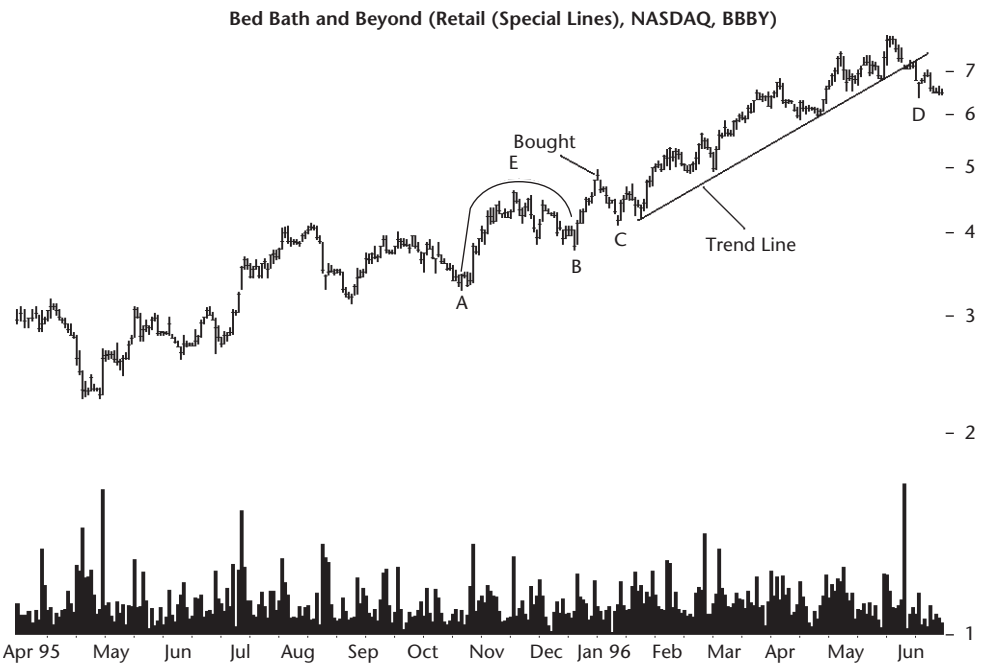


Figure 42.6 As described in the Sample Trade, Robert bought the day after the pattern confirmed and sold at point D when prices pierced the trend line.

higher, so this pattern comes up short. A better gauge is to use overhead resistance and assume that prices will turn back at that point. They may not, but that is the way to estimate your reward (overhead resistance) and risk (underlying support).

Wait for confirmation. Always wait for the pattern to become valid. That happens when price closes above the pattern high, and that is also the buy signal. Investing in a pattern before confirmation is best left to amateurs.

Sample Trade

Robert looked at the chart shown as Figure 42.6 and liked the stock's rising price trend starting in April. He watched the first scallop form in September and October. The retrace of this pattern, ending at point A, was 83%—more than he liked, so he ignored the potential trade. Such a large retrace may mean an especially weak technical picture, and scallops with large retraces tend to underperform.

When the second scallop formed during late October through early December, he saw that the retrace was a more palatable 64%.

He ran though the identification guidelines in Table 42.1 and found the following: On the daily chart, the pattern was in a price uptrend, it looked like an inverted and backward J, the top was reasonably smooth, and prices did not drop below point A, the scallop's start. Meeting those guidelines qualified the pattern as an ascending and inverted scallop.

The day after price closed above the scallop's high, he bought. That timing turned out to be wrong as prices immediately tumbled. Robert is an experienced trader and knows all about throwbacks, so he was not worried. Prices threw back to point C, above his stop (which was placed a nickel below point B), before rebounding.

Robert likes using trend lines as sell signals. He drew a trend line from point A to point B and extended it upward (not shown). He knew that steep trends tended to be short lived, but the upward climb was not steep enough to worry him. He redrew the trend line (shown) as prices climbed.

For fun, he computed the price target and it turned out to be 5.95. Prices climbed through the target, pausing around 5, a round number and a common support and resistance zone, but eventually pushed their way through.

Since prices kept bumping against the trend line without piercing it, he was not worried . . . until early June. That is when prices tumbled through the trend line with meaning. Coupled with excessively high volume a few days earlier, it seemed time to sell. That is what he did the following day (point D).

Robert bought at 4.90 and sold at 6.50, for a gain of 33% in about 5 months. From that point, it took over a year for prices to make a new high.

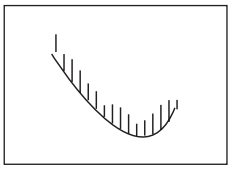
For Best Performance

The following list includes tips and observations that may improve your trade. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 42.1.
- Trade scallops in a bull market; the average rise is better—Table 42.2.
- Scallops in a bull market have lower failure rates—Table 42.3.
- Scallops with breakouts near the yearly low perform best—Table 42.4.
- Avoid throwbacks as they hurt performance—Table 42.4.
- Be patient as it may take months for prices to reach the ultimate high—Table 42.5.
- Select tall patterns or scallops both tall and narrow (bull market) or both tall and wide (bear market)—Table 42.6.
- In a series of scallops in a rising price trend, the scallops tend to get narrower and shorter the higher in the price chain they appear. Thus, a narrow or short scallop may suggest the trend end is near. Likewise, a wide scallop at the start of the trend may suggest a longer-term rise—Table 42.6.
- Wide scallops take longer to reach the ultimate high than narrow ones—Table 42.6.
- Heavy breakout volume pushes price farther in a bull market—Table 42.7.

43

Scallops, Descending



RESULTS SNAPSHOT

Upward Breakouts

Appearance	The price pattern looks like the letter J reversed. The breakout is upward.	
Reversal or continuation	Short-term bullish reversal	
	Bull Market	**Bear Market**
Performance rank	22 out of 23	16 out of 19
Break-even failure rate	22%	20%
Average rise	22%	20%
Change after trend ends	–32%	–36%
Volume trend	Downward	Downward
Throwbacks	62%	58%
Percentage meeting price target	35%	33%
Surprising findings	Reversals perform better than continuations. The best performing have breakouts near the yearly low. Performance improves after a throwback and a gap. Tall or wide patterns do well. Does best when volume is trending upward and has a dome shape.	
See also	Head-and-Shoulders Bottoms, Complex; Rounding Bottoms	

Downward Breakouts

Appearance	Same, but breakout is downward.	
Reversal or continuation	Short-term bearish continuation	
	Bull Market	**Bear Market**
Performance rank	16 out of 21	11 out of 21
Break-even failure rate	15%	8%
Average decline	17%	23%
Change after trend ends	51%	51%
Volume trend	Downward	Downward
Pullbacks	55%	52%
Percentage meeting price target	30%	32%
Surprising findings	Pullbacks hurt performance. Scallops with breakout day gaps have better performance. Gaps improve performance. Heavy breakout volume propels prices farther.	
See also	Same as for upward breakouts.	

The classic definition of scallops refers to the ascending variety only, where you sometimes find repeated saucer-shaped formations in a rising price trend. If there is an ascending variety, there is probably a descending variety. I decided to find out and searched for them.

Scallops may make a tasty meal, but as a chart pattern, they leave me hungry. The failure rate for upward breakouts is too high, and the average rise is too low. Downward breakouts perform better, but only scallops in a bear market show decent results, and even they perform below the average for all chart pattern types. Descending scallops are bearish chart patterns and that is the way to trade them. Avoid trading them in other market conditions and breakout directions unless you find a compelling situation.

Tour

Figure 43.1 shows three examples of descending scallops. A downward price trend leads to the first scallop in September, the widest of the three. It begins with the minor high in August (point A), drops to find support at C, and rounds upward. On the right, the first minor high on the upward retrace marks the end of the pattern (B).

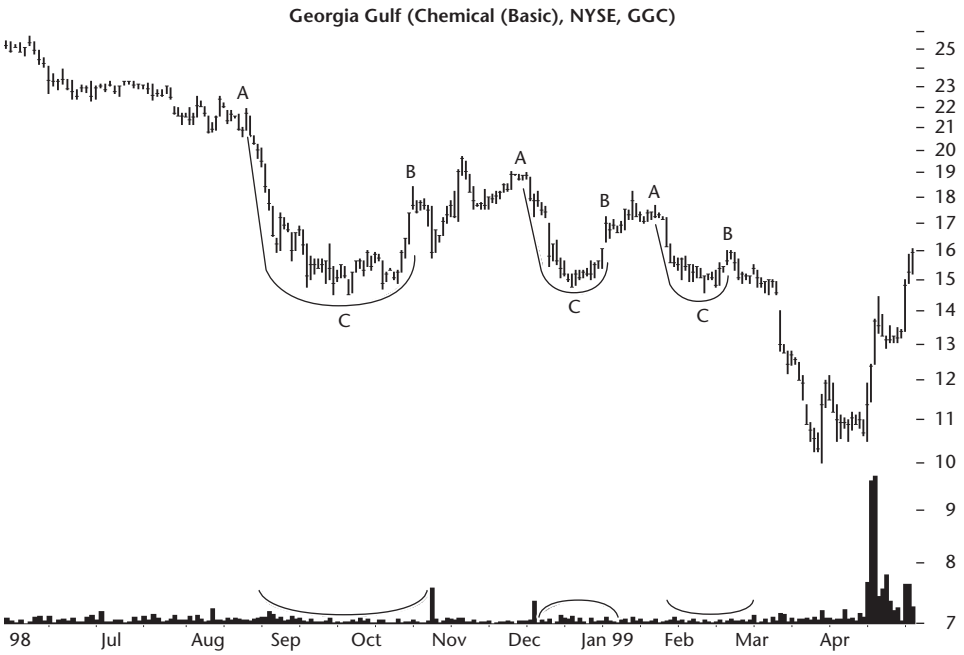


Figure 43.1 Three descending scallops appear in a declining price trend. Notice how they get narrower and shorter along the trend.

Descending scallops resemble the letter J reversed, with the end (B) approximately halfway up the distance to the start (A). For upward moves, a close above point B represents a breakout. For downward moves, a close below C, the lowest low in the pattern, is the breakout price. The September and December scallops have upward breakouts, but the February scallop breaks out downward. Since the overall price trend is downward, notice how the upward breakouts stall as prices bump against an imaginary trend line (not shown) following the price peaks starting from the far left. The trend line acts as overhead resistance in Figure 43.1.

Notice how all three scallops rest on a pier of support at C. The scallop bottom is a common resistance zone. I say resistance because, for downward breakouts, price will push through the support zone, but a pullback attempt will often stall there, so underlying support turns into overhead resistance. In future up moves, price often stalls near the base of a scallop, so keep that in mind even if you do not trade these patterns.

Finally, notice how this threesome tends to get narrower and shorter as the decline proceeds. With descending scallops, this feature is not nearly as pronounced as it is for ascending scallops.

Identification Guidelines

Table 43.1 shows identification characteristics of descending scallops.

Price trend. The descending scallops I looked at appeared in a downward price trend 64% of the time, or about two of every three scallops. Since descending scallops work best as bearish patterns, avoid trading those in an upward price trend. Sometimes you will see a descending scallop form at the top of a long, upward price trend. It acts as a reversal when price breaks out downward. It may be worth trading; the Sample Trade explores one such trade.

Shape. Look for a reverse J shape, with the left side of the scallop higher than the right. The bowl at the bottom of the pattern should appear smooth and rounded, not excessively rough or V shaped. Allow variations: Tall but narrow scallops may look more V shaped than wider scallops and often a price spike will poke out downward.

Ends. The start and end of the pattern (point A and B in Figure 43.1) should be far apart in price. The usual retrace, C to B, of the A to C distance is 60%. In other words, price climbs 60% of the way to A from the bowl low. Since this figure is an average, allow variations, but the key is to avoid scallops that look like rounding turns—two ends at nearly the same price.

Volume. Most of the time, 70%, volume will be dome shaped. I never exclude a scallop because of the volume shape, but scallops with upward breakouts perform better with dome-shaped volume, and scallops with downward breakouts do best with U-shaped volume.

Figure 43.2 shows four descending scallops. You can see that the overall price trend is downward. It starts on the left at about 20 and saucers down to about 15. The descending scallops appear like reverse J patterns. The minor high on the right is below the left minor high and between the two peaks is a rounded recession. You can see that the last scallop has minor highs that are nearly equal. This feature often suggests the declining price trend is nearing an end. In this case, prices reach the ultimate low in less than 2 months at 13.63, quite close to the last bowl low of 14.75.

Table 43.1
Identification Characteristics

Characteristic	Discussion
Price trend	Look for a downward price trend leading to the scallop. They do occur in price uptrends, but that is rare.
Shape	A reverse J shape with prices much higher on the left side than on the right. The bowl should be a rounded turn.
Ends	The start and end of the pattern should not be near one another in price. The end (right peak) usually retraces 60% of the way up the left side.
Volume	Volume appears dome shaped 70% of the time.

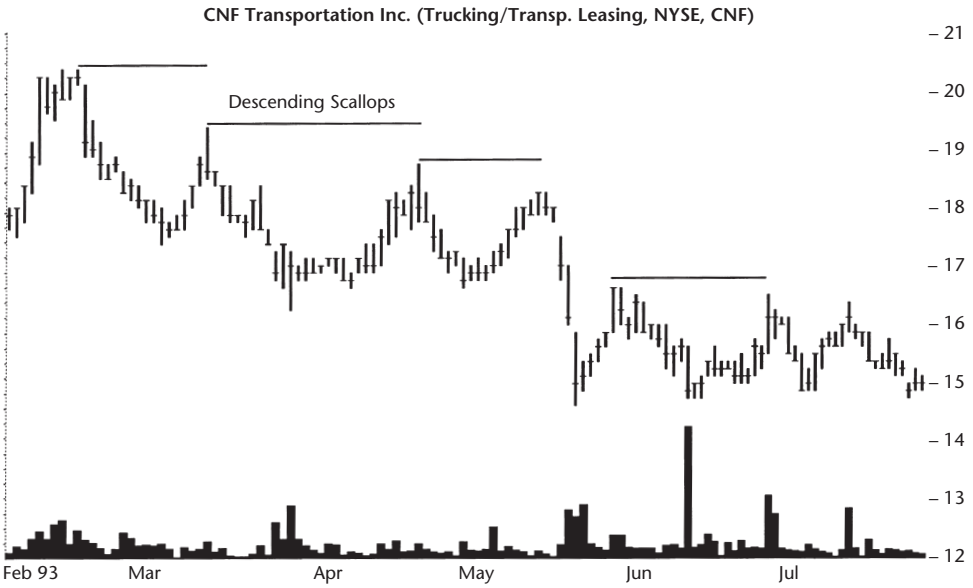


Figure 43.2 Four consecutive descending scallops.

The volume trend is irregular. I have noticed a tendency for a volume spike to appear near the center of the formation as prices switch from moving downward to upward. In Figure 43.2 you can see the spikes in late March and mid-June.

Focus on Failures

Descending scallops fail most often because of two other chart patterns: support and resistance. Figure 43.3 shows the first example. The July scallop begins at A and ends at B. The bowl has a downward price spike, making the turn less smooth than I like to see. Volume is dome shaped, which is typical for descending scallops. After B, prices move down and it looks like they will drop below the bowl low and complete a breakout. Since price is declining leading to the scallop, down is the expected breakout direction. However, price comes close to breaking out downward, but the close remains above the bowl low. When it closes above B at C, the pattern surprises with an upward breakout.

Prices rise to the height of A and throw back to the price at B. Overhead resistance is the culprit. Numerous valleys touch the resistance line and a solid block of horizontal price movement adds strength to the zone in January to March.

As in most throwbacks, prices recover and attempt a new high that succeeds, but not by much. Overhead resistance is there to swat it down and prices drop below the pattern low. The rise from B to the resistance zone where price stalls measures 5%.

Figure 43.4 shows the second example of a failure, this time with a downward breakout. Prices do not decline far before rebounding and eventually making a new yearly high at 113 (not shown).

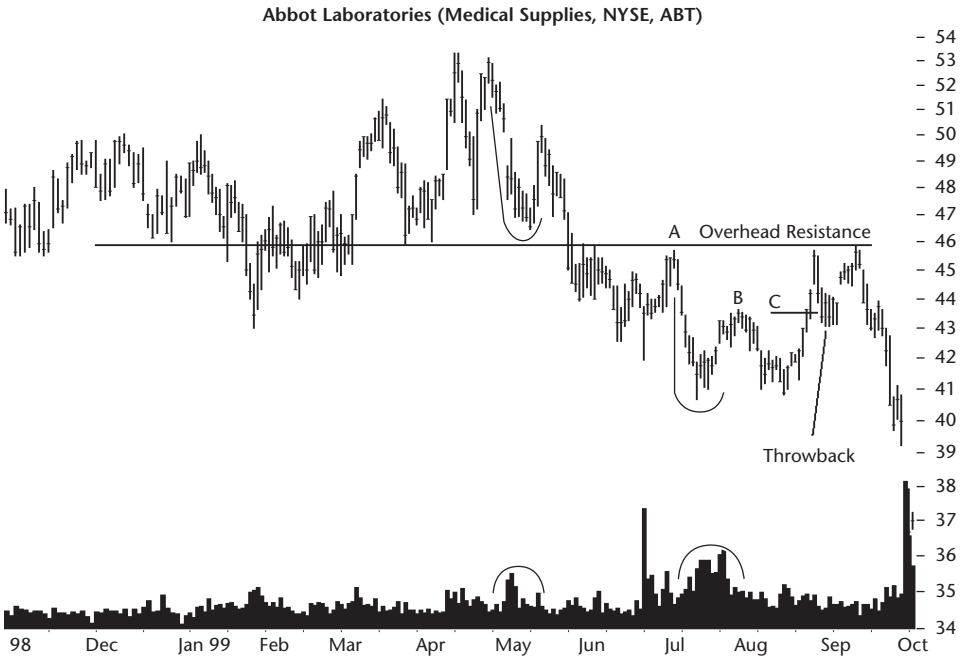


Figure 43.3 Overhead resistance causes the July scallop to stall and eventually prices turn down. The rise measures just 5%.

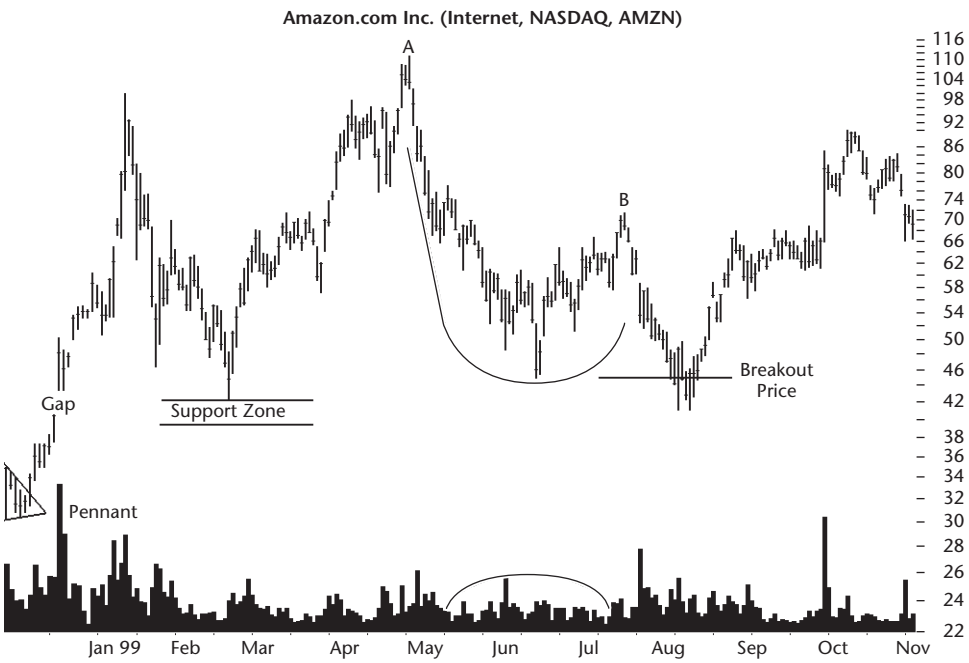


Figure 43.4 This scallop fails to descend far after a downward breakout. Notice the large price range.

Why did this descending scallop fail? The only explanation I can offer is hard to justify. There is meager support announced by the February low and the gap in December 1998. Below that, a small pennant also provides support.

If I were trading this stock and saw the downward breakout, I would believe that prices would continue dropping. Perhaps the fundamentals explain the robust support that stopped the decline, but my records do not go back that far. Whatever the reason, proper use of stops would have saved a bundle as prices climbed from a low of 41 in August to 113 in less than 5 months.

Statistics

Table 43.2 shows general statistics for descending scallops.

Number of formations. My fishing found 1,104 scallops, quite a haul considering I checked only 500 stocks from mid-1991 to 1996 and another 200 from 1999 to 2003.

Reversal or continuation. As the table shows, most scallops (54% versus 46%) act as continuations of the price trend. So if price is trending down, expect the breakout to be downward, too. Reversals occur at the top of upward trends and during declines, whether at the bottom of the downtrend or in the middle as the corrective phase of a measured move down.

Reversals perform better than continuations under all market types and breakout directions except in a bear market after a downward breakout.

Table 43.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	232	142	457	273
Reversal (R), continuation (C)	200 R, 32 C	83 R, 59 C	120 R, 337 C	106 R, 167 C
R/C performance	23% R, 17% C	20% R, 19% C	–19% R, –16% C	–22% R, –23% C
Average rise or decline	22%	20%	–17%	–23%
Rises or declines over 45%	40 or 17%	18 or 13%	7 or 2%	22 or 8%
Change after trend ends	–32%	–36%	51%	51%
Busted pattern performance	45%	46%[a]	–27%	–37%[a]
Standard & Poor's 500 change	8%	–4%	–1%	–14%
Days to ultimate high or low	106	70	47	30

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Average rise or decline. Descending scallops are poor performers except in a bear market when they have downward breakouts. The decline measures 23%, just shy of the 24% average decline for all bearish chart pattern types.

Rises or declines over 45%. Usually, a well-performing chart pattern would have a large number of patterns rising over 45%, but not descending scallops. Just 17% make the grade, well below the 30% to 40% I like to see. The low number emphasizes how poorly this pattern performs. However, expect low numbers for downward breakouts.

Change after trend ends. Once price reaches the ultimate high or low, price rebounds, but even so, the numbers are not exceptional. The best performance comes after a downward breakout, where the rise measures 51%. That number sounds good, and I will take any trade that comes anywhere close to that, but I have seen other patterns with rebounds of 60% or more.

Busted pattern performance. When price moves less than 5% and then breaks out in the opposite direction, you can make money trading the new direction. Table 43.2 shows the average results but they overstate what you can make (measured from the ultimate high to the new ultimate low or the reverse).

Standard & Poor's 500 change. The weak bull market rise of 8% for the index may explain the mediocre average rise for descending scallops. Other chart patterns show the S&P rising 15% or higher, helping individual stocks rise also. It seems that descending scallops are not as fortunate.

In a bear market, the market decline measures 14%, a very good showing that helps bearish scallops drop. Think of the saying, "a rising tide lifts all boats," and apply it to falling markets and you will understand the importance of the general market action on individual stock performance. Trade with the market trend for the best results.

Days to ultimate high or low. Compare the 106 days it takes scallops in a bull market to rise 22% with the 30 days it takes scallops in a bear market to drop 23%. Without doing the math, you can guess that the bear market decline must be steeper than the rise in a bull market. This finding suggests you should short this pattern in a bear market. The rise in a bull market takes three times as long.

Table 43.3 shows failure rates for descending scallops. Of course, your eyes will search for the lowest rate in the table and you will find it in the rightmost column: bear market, down breakout. Just 8% fail to drop more than 5%. This figure nearly triples to 22% and almost doubles again to 37% for declines measuring 10% and 15%, respectively. Half (48%) of all bearish patterns fail to drop more than 20%. Notice that for larger moves, over 25%, scallops with upward breakouts (in both bull and bear markets) perform better (they have lower failure rates).

What do the numbers mean? Trade this pattern in a bear market by shorting a stock. Table 43.3 gives you a feel for how often a scallop will fail to cover your expenses and profit margin. For example, if your trading expenses are 5% and you want to make 10% on each trade (15% total), then over a third

Table 43.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	52 or 22%	28 or 20%	69 or 15%	22 or 8%
10	88 or 38%	49 or 35%	150 or 33%	59 or 22%
15	113 or 49%	64 or 45%	230 or 50%	101 or 37%
20	129 or 56%	78 or 55%	302 or 66%	132 or 48%
25	146 or 63%	90 or 63%	365 or 80%	172 or 63%
30	155 or 67%	102 or 72%	397 or 87%	200 or 73%
35	173 or 75%	108 or 76%	419 or 92%	222 or 81%
50	197 or 85%	129 or 91%	453 or 99%	257 or 94%
75	215 or 93%	136 or 96%	457 or 100%	273 or 100%
Over 75	232 or 100%	142 or 100%	457 or 100%	273 or 100%

(37%) of the scallops in a bear market will fail to decline at least 15%. Optimistically, about two of every three trades will work, on average, but that outcome depends on your trading skills and luck. If the loss measures 10%, to offset the losing trade, your winners will have to make an average of 27%. As Table 43.3 shows, 73% of the scallops fail to drop 30% after a downward breakout in a bear market. That statistic suggests you will have a very difficult time making your profit margin consistently.

Table 43.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. It takes price about 3 weeks to move from the scallop's right side peak to the breakout. Bull markets with upward breakouts take an additional 2 weeks (35 days total) for some reason.

Yearly position. Descending scallops, particularly scallops with downward breakouts, appear most often near the yearly low.

Yearly position, performance. The best performing descending scallops have breakouts near the yearly low for upward breakouts, and in the middle or high of the yearly trading range for downward breakouts.

Throwbacks and pullbacks. Throwbacks and pullbacks occur about half the time, and it takes between 8 and 11 days to return to the breakout price. Upward breakouts take slightly less time than downward breakouts.

When a *throwback* occurs (upward breakouts), performance improves. This is an unusual result. Other chart patterns show results similar to scallops with downward breakouts: performance improves if a pullback does *not* occur.

Gaps. Gaps help postbreakout performance under all market conditions and breakout directions. Notice how the gap size is much larger for downward breakouts than for upward ones. This feature may be the result of adverse fun-

Table 43.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	35 days	22 days	24 days	21 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L44%, C39%, H17%	L41%, C39%, H20%	L69%, C28%, H3%	L64%, C32%, H5%
Percentage rise/decline for each 12-month lookback period	L30%, C22%, H15%	L25%, C17%, H15%[a]	L16%, C18%, H24%[a]	L22%, C24%, H17%[a]
Throwback/pullback	62%	58%	55%	52%
Average time to throwback/ pullback ends	8 days	9 days	11 days	11 days
Average rise/decline for patterns with throwback/pullback	25%	20%	14%	21%
Average rise/decline for patterns without throwback/pullback	18%	19%	19%	24%
Performance with breakout gap	23%	23%[a]	22%	26%
Performance without breakout gap	22%	19%	16%	22%
Average gap size	$0.27	$0.39	$0.80	$1.79

[a]Fewer than 30 samples.

damental news (bad earnings, bad same store sales results, and so forth). The large gap size may also explain why performance improves after a gap. I have seen strong momentum pull a stock down far enough that it cannot complete a pullback. The downward momentum powers prices lower.

Table 43.5 shows time to the ultimate high or low. Notice how many scallops reach their ultimate move in the first 2 weeks. For example, 47% of the scallops with downward breakouts in a bear market reach bottom by the end of week 2. By week three, 62% have hit bottom. Upward breakouts seem to take longer as the rightmost column suggests. A third of the scallops with upward breakouts in a bull market are still looking for the ultimate high after 70 days (about 2.5 months).

The numbers suggest patience for upward breakouts and a finger on the trigger for downward breakouts. Be prepared to cover a short quickly (in a week or two) after a downward breakout.

Also, notice the increase in scallops hitting the ceiling (upward breakout) in a bear market after 49 days. If your trade lasts that long, watch for a trend change 6 to 8 weeks after the breakout.

Table 43.6 shows statistics related to size.

Table 43.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	24%	10%	8%	3%	6%	2%	7%	1%	7%	1%	30%
Bull market, up breakout	28%	11%	7%	3%	3%	3%	3%	2%	5%	2%	33%
Bear market, down breakout	31%	16%	15%	7%	6%	4%	5%	3%	0%	3%	11%
Bull market, down breakout	30%	13%	6%	6%	6%	5%	4%	4%	3%	1%	22%

Table 43.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	28%	20%	–17%	–26%
Short pattern performance	18%	19%	–17%	–20%
Median height as a percentage of breakout price	24.00%	26.97%	22.27%	29.25%
Narrow pattern performance	21%	19%	–17%	–22%
Wide pattern performance	23%	20%	–16%	–23%
Median length	42 days	33 days	34 days	30 days
Average formation length	49 days	40 days	41 days	38 days
Short and narrow performance	18%	19%	–17%	–20%
Short and wide performance	17%	20%[a]	–16%	–21%
Tall and wide performance	29%	19%	–17%	–25%
Tall and narrow performance	27%	20%[a]	–18%	–26%
Average width (days) of first through third scallop in a series	49, 50, 50[a]	40, 43[a], 37[a]	41, 40, 46	38, 35, 39[a]
Average height of first through third scallop in series as percentage of breakout price	24%, 24%, 22%[a]	30%, 32%[a], 34%[a]	26%, 21%, 25%	30%, 37%, 74%[a]
Narrow scallops: days to ultimate high or low	103	68	47	30
Wide scallops: days to ultimate high or low	109	72	46	29

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Height. Tall patterns perform equal to or better than short ones; so select patterns taller than the median.

Width. Wide patterns perform better than narrow ones in three out of the four categories. Scallops with downward breakouts in a bull market perform marginally better when they are narrower than the median (which I used to determine width).

Average formation length. The average scallop is over a month long (6 to 7 weeks is typical).

Height and width combinations. Which combination of height and width works best? Scallops both tall and wide do well after an upward breakout in a bull market. Tall and narrow outperforms after a downward breakout in a bear market. The other combinations show marginal performance differences.

Series width and height. I show the average width and height for scallops in a series. For example, the three scallops shown in Figure 43.1 tend to get narrower and shorter the farther down the price trend they appear.

Scallops in bear markets tend to get taller, but beyond that, the results show no consistent trend.

Scallop width and time. Wide scallops with upward breakouts take marginally longer to reach the ultimate high. Narrow scallops with downward breakouts take slightly longer to bottom out. Since the results are so close, I do not attach any significance to them.

Table 43.7 shows volume-related statistics.

Volume trend. Scallops with upward breakouts tend to do better when volume is rising. Downward breakouts show the reverse, but the differences

Table 43.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	24%	23%	17%	22%
Falling volume trend performance	21%	17%	17%	23%
U-shaped volume pattern performance	20%	19%[a]	18%	25%
Dome-shaped volume pattern performance	23%	20%	16%	22%
Neither U-shaped nor dome-shaped volume pattern performance	14%[a]	14%[a]	19%[a]	19%[a]
Heavy breakout volume performance	23%	20%	18%	23%
Light breakout volume performance	21%	20%	16%	21%

[a]Fewer than 30 samples.

are negligible. If you have a compelling reason to trade a scallop with an upward breakout, check to see if volume is higher at the end of the pattern than at the start. If so, you *may* have a better performing pattern (but no guarantee).

Volume shapes. Upward breakouts do best when volume is dome shaped. Downward breakouts are a mixed bag as sometimes scallops with a random shape outperform and sometimes patterns with U-shaped volume do better.

Breakout volume. The results across the board do not show significant improvement, but they do suggest that scallops with heavy breakout volume tend to outperform.

Trading Tactics

Table 43.8 shows trading tactics for descending scallops.

Measure rule. I wish I had good news for the measure rule, but it seldom works. The Results Snapshot ("Percentage meeting price target") shows the numbers, but only a third of the scallops will hit their predicted targets.

Let me give you an example of how to use the measure rule. Figure 43.5 shows a descending scallop at the top of an upward price trend. It acts as a reversal. How far will prices decline? Compute the formation height by subtracting the low near B (21.11) from the high at A (23.75), giving a height of 2.64. Since the breakout is downward, subtract the result from the low (B) to get a target of 18.47. Price reaches the target in late July.

If the breakout were upward, then you would add the height (2.64) to C, the right lip high (at 22.71) for a target of 25.35.

Breakout. Upward breakouts use a close above the high on the right side of the scallop (point C in Figure 43.5). Downward breakouts use a close below the lowest low in the pattern (B). Since the breakout direction is unknown, do

Table 43.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute the scallop height by taking the difference between the highest high and lowest low in the pattern. Add the result to the right scallop peak for upward breakouts or subtract it from the lowest low for downward breakouts to get the target price. This tactic works only about 33% of the time.
Breakout	A close above the right lip high marks an upward breakout and a close below the lowest low is a downward breakout.
Stops	For upward breakouts, place the stop below the lowest low in the pattern. For downward breakouts, place the stop slightly above the right lip high. Move the stop as prices advance.
Trends	Trade with the market trend, especially downward breakouts in a bear market.

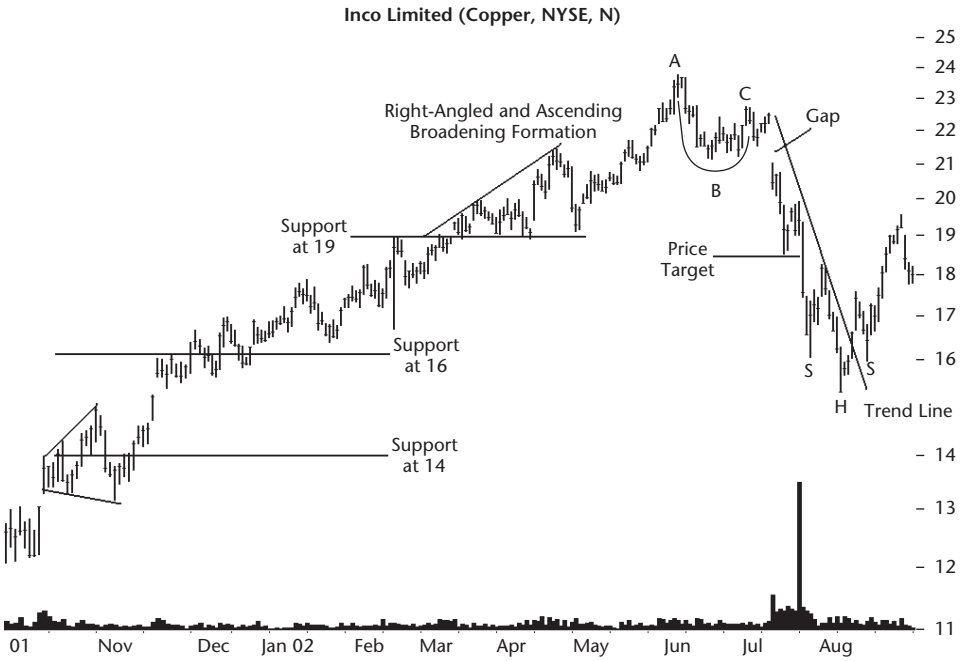


Figure 43.5 This descending scallop acts as a reversal of the upward price trend.

not trade a scallop until the breakout occurs unless you have a compelling reason for doing so. Remember that the breakout direction usually follows the price trend leading to the pattern. For example, if price is trending down, expect a downward breakout. In a strong bear market, an upward breakout may falter.

Stops. Since scallops perform so poorly, use a stop to protect any profits you may have and to limit losses. A good starting point for downward breakouts is to use point C (see Figure 43.5) as the stop point. For upward breakouts, use the formation low (B) as the stop-loss point.

Place the stop a few cents below the low (for long trades), preferably on an oddball number (20.93 instead of 21, for example). Every novice investor is going to use a round number, so position your stop below them. They will be stopped out, and you stand a better chance of having your trade left intact. Sometimes though, this strategy will cause a larger loss because of stop running. That is when a stop causes price to decline, which trips additional stops, forcing prices even lower. To avoid this pitfall, place your stop above the others, as in 21.07 instead of 21. That position also narrows your loss (for long trades). Move the stop to just above the prior minor high (downward breakouts) or below the prior minor low (upward breakouts) as price advances. Since stop running seldom occurs, I place my stop below the round number.

Trends. Since descending scallops work best in a declining price trend, short the stock only in a bear market. If you own the stock, ask yourself if you want to suffer through a 20% decline. Most of the time, it may be wise to sell the stock and look for a more promising situation instead of riding out a decline.

Sample Trade

Figure 43.5 shows the sample trade for descending scallops. How would you trade the June scallop? The first thing you may notice is that it appears at the end of a long upward price trend. Thus, this scallop acts as a reversal. This fact does not become clear until price closes below point B, the lowest low in the pattern. When that happens, it signals a downward breakout and a trend change. That movement means shorting the stock (or selling shares you own), a risky maneuver that should be left to serious traders and investors.

Before taking a position in the stock, use the measure rule to determine how far prices will decline. I already discussed this in Trading Tactics, so refer to the measure rule discussion there for more information.

Look for support and resistance zones. Overhead resistance will probably occur at the old high (in early June at 23.75), perhaps forming a double top.

Support appears at 19, as shown in Figure 43.5, set up by the base of a right-angled and ascending broadening formation. If price pierces 19, then I would consider it likely to stall at 16. Although not shown in the figure, 16 is the price at which the decline stalled during the summer and fall of 2001. Additional support appears as a broadening top, centered near 14 and extending as far back as 1999.

Since the measure rule target (18.47) and support (at 19) are nearly the same price, that is where I would expect price to stop. If the market were also trending down during the trade, an additional decline to the next support zone (16) might be possible or even likely. Below that might be a dream unless company fundamentals are in serious trouble.

With a breakout price of 21.11 and a target of 19, is a 5% decline worth trading, especially a risky short sale? I do not think so. Suppose price declines to 16, for a 24% loss. Now we are talking!

If fundamental analysis shows the market flooded with nickel, copper, cobalt, or precious metals, all of which Inco produces, then the oversupply should translate into lower stock prices. News such as that would give me confidence to short the stock.

According to Table 43.4, a gap in a bear market suggests a larger decline than without a gap. Suppose you shorted the stock at the close the day after the gap. That would be at 20.45, well below the formation low of 21.11.

In the coming days, price drops. For short-term traders, consider covering the short once price nears support at 19 or the predicted target of 18.47. Many times, the decline will fall short of the target and it may be prudent to take your profits or tighten (lower) your stop. A lower stop allows you to capture more of your profit but still give the stock room to drop farther.

If you put an order to cover the short at 18.47, you would have missed it because price declined to 18.52 before rebounding for a week. Patience would be rewarded, though, when prices dropped through support and continued down, triggering the order.

The stock hit 16.05, pulled back to the price target, and then resumed the decline, making a lower low. Drawing a down trend line connecting the minor highs would give a timely cover signal. If you missed that signal, a retest of the low at 16 in early August was another one. Since the minor low did not make a lower low, that suggested a trend change. The price pattern takes the shape of a head-and-shoulders bottom (the S-H-S pattern in July and August), suggesting higher prices ahead, and time to cover the short. If the order was covered at say, 17, that would give a return of nearly 17% in about a month.

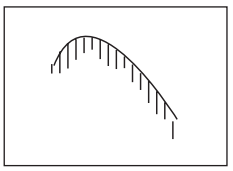
For Best Performance

The following list includes tips and observations to help select descending scallops that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 43.1.
- Trade scallops with downward breakouts in a bear market—Table 43.2.
- Reversals perform marginally better than continuations—Table 43.2.
- Bear market scallops with downward breakouts have the lowest failure rates up to declines of 25%, then scallops with upward breakouts have lower failure rates—Table 43.3.
- Select scallops with upward breakouts near the yearly low—Table 43.4.
- Throwbacks help performance but pullbacks hurt it—Table 43.4.
- Trade scallops with breakout day gaps—Table 43.4.
- Let profits run in a bull market but be prepared to cover shorts quickly in a bear market. Expect price weakness 6 to 8 weeks after the upward breakout from a scallop in a bear market—Table 43.5.
- Select tall patterns—Table 43.6.
- Pick wide patterns except those with downward breakouts in a bull market—Table 43.6.
- A rising volume trend works well for upward breakouts —Table 43.7.
- Select scallops with upward breakouts and dome-shaped volume—Table 43.7.
- Trade scallops with heavy breakout volume—Table 43.7.

44

Scallops, Descending and Inverted



RESULTS SNAPSHOT

Downward Breakouts

Appearance	Looks like an upside-down J.
Reversal or continuation	Short-term bearish continuation

	Bull Market	Bear Market
Performance rank	6 out of 21	5 out of 21
Break-even failure rate	10%	5%
Average decline	18%	23%
Change after trend ends	55%	55%
Volume trend	Upward	Upward
Pullbacks	58%	50%
Percentage meeting price target	38%	27%

Surprising findings: Pullbacks hurt performance. Tall patterns perform better than short ones. A series of scallops in a downward price trend (bull market) tend to get narrower and shorter as price descends. Scallops with a falling volume trend or U shape perform better in a bear market.

This chapter completes the four scallop variations: ascending, descending, and their inverted counterparts. The descending and inverted scallop looks like an upside down J, and prices reach the ultimate low in less than 3 months. It is a bearish pattern, meaning that prices break out downward and continue lower.

As if this pattern wore glasses, the pattern has trouble reaching the price target, with less than a third finding the bull's-eye. I like to see values above 80%, but that is rare (for any chart pattern). The low success rate suggests price may not decline nearly as far as you hope.

Like its siblings, there are plenty of surprises with this pattern, most of which are self-explanatory. However, when several scallops appear in the same downward price trend in a bull market, the scallops tend to get narrower and shorter as they appear over time. Thus, if you are considering trading a narrow or short scallop that appears after prices have been trending down, do so with caution. The scallop may signal an approaching trend change.

Tour

What does a descending and inverted scallop look like? Figure 44.1 shows a typical example. Prices leading to the pattern trend downward and then bump up (from A to B) and round over, forming an inverted bowl. After that, prices drop, usually in a sharp, straight-line decline like that shown from B to C.

At the end of the pattern (point C), prices retrace upward forming a sort of hook (point D; think of a soup ladle upside down). The breakout occurs

Figure 44.1 A descending and inverted scallop appears as an upside-down J.

when price closes below the lowest low in the pattern. After the breakout, price continues down.

Scallop identification is not difficult. The guidelines in the next section describe characteristics to look for.

Identification Guidelines

Table 44.1 shows identification guidelines for descending and inverted scallops.

Daily chart. I used the daily chart but have not checked the performance on weekly or intraday charts. I can find a gazillion of them on the daily chart without need to resort to other periods. You may want to explore this pattern on different time scales to see how it behaves, and in securities other than stocks.

Downward price trend. Look for a downward price trend leading to the scallop. Occasionally, but rarely, you will find scallops at the end of a rising price trend.

Inverted J shape. The pattern resembles an inverted J with the pattern start (point A in Figure 44.1) higher in price than the end (point C).

Smooth top. The top of the pattern should appear smooth, although sometimes you have to use your imagination. I did not include inverted V-shaped scallops where the turn was not a turn at all but the joining of two almost straight trend lines.

Table 44.1
Identification Characteristics

Characteristic	Discussion
Daily chart	Use the daily chart to find the pattern.
Downward price trend	Most scallops appear in a downward price trend or at bearish turning points.
Inverted J shape	Price moves up and then rounds over at the top and tumbles, forming an inverted J shape.
Smooth top	Look for daily high prices that, when connected, form a smooth turn. Larger patterns may not be as smooth because you are connecting minor highs. Allow variations.
Bowl height	The rounded, inverted bowl portion of the pattern from the scallop start to its high is usually about half the length (55%) of the following down move.
End points	Look for the scallop's end to be below the start. Both the start and end should form at turning points.
Proportion	The width of the scallop should be proportional to the following decline. Avoid selecting scallops with narrow turns followed by large declines, or the reverse.
Confirmation price	Price must close below the lowest low in the pattern without first rising higher than the pattern's high. Only then is the pattern valid.

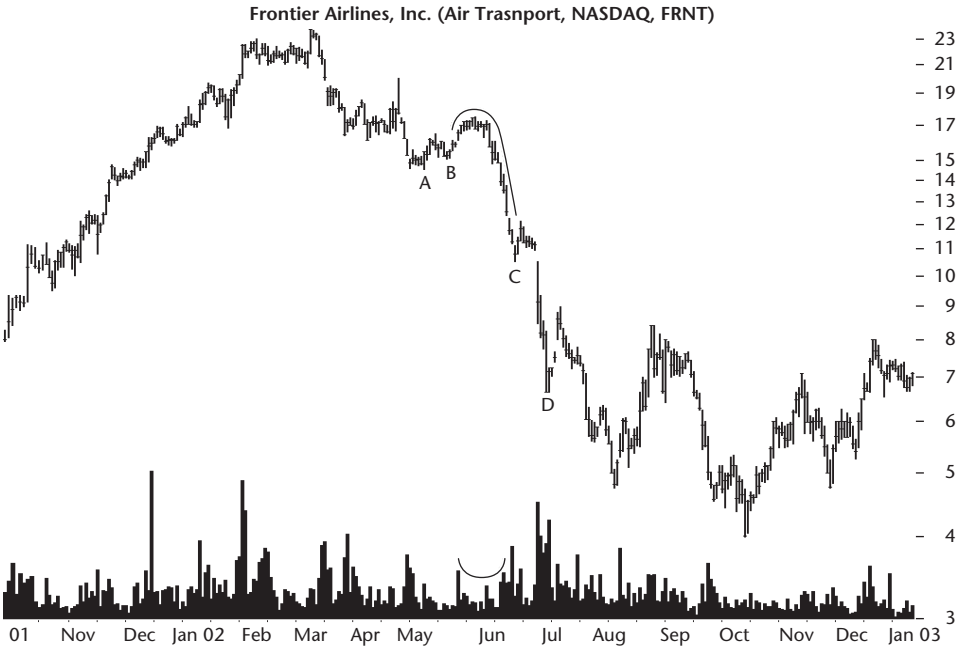


Figure 44.2 B and C mark the beginning and end of the scallop, not A or D.

Bowl height. The rounded top I call the bowl, although it is an inverted bowl. In Figure 44.1, the bowl height is the distance from A to B. Typically, the bowl height is half (54% in a bull market and 58% in a bear market) the move from B to C, but expect variations.

You want to avoid patterns with point C higher than point A—that is, the end higher than the start. In short, look for lower lows.

End points. You are going to have a problem with end points. I did. Look at Figure 44.2. Where does the scallop start: at minor low A or B? Where does it end, at C or D? I chose the inner points, B and C as the ends for my study of scallops. In a few cases, I used the outer points, A and D, when I wanted to hook a large scallop. In such a case, the BC scallop was not as well defined as the one shown in the figure. I used the nearest price turning point to mark the ends.

Proportion. The pattern should look proportional, meaning that the inverted bowl at the top should be sized to the following decline. Do not pair a wide bowl with a meager decline. Use the figures in this chapter as guides.

Confirmation price. Price must close below the lowest low in the pattern. If prices first climb higher than the highest pattern high, then it is not a scallop.

Focus on Failures

Why do scallops fail to perform as expected? Most problems occur with identification. Figure 44.3 shows an identification failure. The ends should

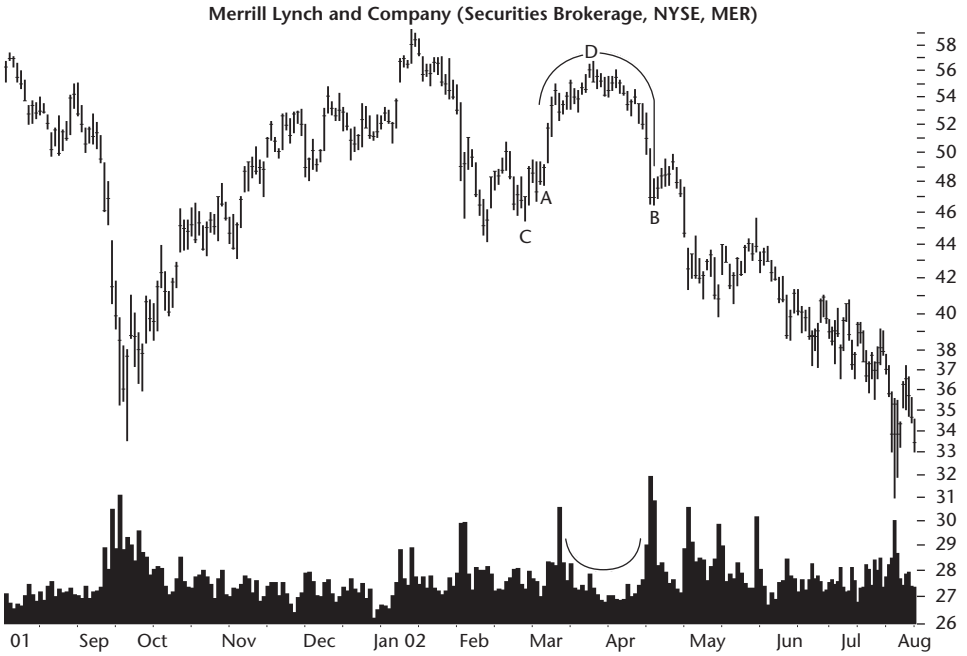


Figure 44.3 A pattern failure: Prices at A should be well above B.

make the pattern look like an inverted J. Does the scallop shown in the figure portray this feature? Point A is too close to the price of B, making it look like an inverted U, not a J.

This illustration also brings up the question of where the pattern starts. If you chose C as the starting point, then the pattern is clearly wrong, as C is below B. Choosing A as the first price turning point puts the start slightly above B, but still not far enough.

Suppose that A and B are fine. Look at the width compared to the height. The decline from D to B is not proportional to the width. In other words, a pattern this wide would probably have a longer decline. In the patterns I looked at, the usual decline from D to B was almost twice the distance from D to A. That is an average, but it is a guideline to keep in mind.

Statistics

Table 44.2 shows general of statistics for descending and inverted scallops.

Number of formations. I used two databases for this pattern. The first includes 500 stocks from mid-1991 to mid-1996. The second uses about 200 stocks from 1996 to mid-2003. During that time, I found 733 patterns split into bull and bear markets.

Reversal or continuation. I found few reversals: Only 15% of the patterns acted as reversals of the upward trend in a bull market and even fewer (11%) in a bear market. The vast majority acted as continuations of the pre-

Table 44.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	556	177
Reversal (R), continuation (C)	81 R, 475 C	19 R, 158 C
R/C performance	19% R, 18% C	25% R, 23% C
Average decline	18%	23%
Declines over 45%	15 or 3%	20 or 11%
Change after trend ends	55%	55%
Busted pattern performance	45%	39%[a]
Standard & Poor's 500 change	–1%	–13%
Days to ultimate low	61	28

Note: Minus sign means decline.

[a]Fewer than 30 samples.

vailing downward price trend. I did find several patterns that looked like scallops at the end of a declining price trend, but since they did not confirm, they were not included in the study. However, the reversals performed marginally better than did those acting as continuations.

Average decline. The average decline after a scallop was 18% and 23% in bull and bear markets, respectively. This finding suggests that you should trade with the market trend. Trading a bearish pattern in a bull market may set you up for a meager profit or even a loss.

Declines over 45%. Like most bearish chart patterns, few scallops show declines over 45%. As you might expect, more bear market scallops drop over 45% than do bull market ones.

Change after trend ends. Once price reaches the ultimate low, what happens? It rebounds 55%. Even if you wait for a 20% climb, signaling a trend change and then buy, there is still plenty of upside. The bad new is that the 55% gain is an average, so expect less.

Busted pattern performance. The rise after a busted pattern I consider weak. Other chart patterns rebound more strongly, so it may be better to look elsewhere.

Standard & Poor's 500 change. The 13% market drop helped bear market scallops decline.

Days to ultimate low. How long did it take to reach the ultimate low? About 2 months in a bull market but less than a month in a bear market. Thus, trade this pattern in a bear market. You stand to make more money in a shorter time, on average. Note that the slope of the decline in a bear market must be steeper than the rise in a bull market, a condition we see with other chart patterns, too.

Table 44.3
Failure Rates

Maximum Price Decline (%)	Bull Market	Bear Market
5 (breakeven)	53 or 10%	9 or 5%
10	143 or 26%	36 or 20%
15	260 or 47%	67 or 38%
20	352 or 63%	90 or 51%
25	419 or 75%	107 or 60%
30	475 or 85%	125 or 71%
35	509 or 92%	135 or 76%
50	547 or 98%	165 or 93%
75	556 or 100%	177 or 100%
Over 75	556 or 100%	177 or 100%

Table 44.3 shows failure rates for descending and inverted scallops. The failure rate in a bear market, at 5%, is quite good and is half the bull market rate. The bear market rate quadruples to 20% and nearly doubles again, to 38%, for moves of 10% and 15%, respectively. Half the patterns (51%) will fail to drop more than 20% in a bear market. Those numbers are not encouraging. Bull markets do even worse. Three out of four scallops will fail to drop more than 25%.

What do all the numbers mean? If you trade a scallop and hope for a large decline, say 50%, just 2% of scallops in bull markets and 7% in bear markets actually decline that far. Thus, you are either being too optimistic or trading on inside information. Hope has never filled my bank account, and the authorities frown on insider trading.

Table 44.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. Investors trading this pattern sometimes have to wait more than a month for the breakout. The bear market decline at a steeper slope explains the breakout happening a week sooner than in a bull market.

Yearly position. Most of the scallops have breakouts within a third of the yearly low. Few occur near the yearly high. That fact should not be a complete surprise because the breakout is at the bottom of the pattern, placing it away from the high.

Yearly position, performance. Mapping the performance according to where the breakout occurred in the yearly price range showed that the best performers in a bull market tumbled from the middle of the range. In bear markets, those with breakouts near the yearly low performed best.

Pullbacks. A pullback occurs about half the time and takes 9 to 10 days, on average, to return to the breakout price. When a pullback occurs, perfor-

Table 44.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	31 days	23 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L65%, C31%, H4%	L70%, C29%, H1%
Percentage decline for each 12-month lookback period	L17%, C19%, H16%[a]	L24%, C22%, H21%[a]
Pullbacks	58%	50%
Average time to pullback ends	10 days	9 days
Average decline for patterns with pullback	17%	19%
Average decline for patterns without pullback	19%	27%
Performance with breakout gap	–20%	–23%[a]
Performance without breakout gap	–18%	–23%
Average gap size	$0.43	$1.14

Note: Minus sign means decline.

[a]Fewer than 30 samples.

mance suffers. For example, in a bear market, scallops having a pullback dropped 19% after the breakout. Those without a pullback had declines averaging 27%.

To prevent a pullback, avoid scallops with nearby underlying support.

Gaps. Scallops show mixed results as far as breakout day gaps are concerned. In a bull market, scallops with gaps perform better. In a bear market, there is no performance difference. Notice how the average gap size in a bear market is nearly triple the bull market size ($1.14 versus 43 cents). I have seen this characteristic in other chart patterns. In some cases, bad news powers a stock lower more easily than good news pushes it higher.

Table 44.5 shows a frequency distribution of time to the ultimate low. Almost half the inverted scallops in a bear market reach the ultimate low in the first 2 weeks. That is wonderful news for traders because they can maximize the number of annual trades by going short.

Table 44.5
Frequency Distribution of Days to Ultimate Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	38%	11%	9%	12%	3%	5%	3%	5%	3%	2%	8%
Bull market	22%	9%	8%	7%	5%	3%	4%	4%	4%	3%	30%

At the other end of the table, we find that 30% of the scallops in a bull market are still searching for the ultimate low like a spelunker whose flashlight has died.

Notice the slight rise in patterns bottoming out a month into the trade (day 28 in a bear market). If you short a stock showing a descending and inverted scallop, be prepared to close out your position a month after the breakout.

Table 44.6 shows size statistics for scallops.

Height. Tall scallops perform better than short ones in both markets. Height is one of the most reliable predictors of performance, so measure the pattern height (and divide it by the breakout price) and compare it to the median. Those taller than the median stand a better chance of outperforming, especially in a bear market.

Width. Performance improves for wide scallops in a bear market, but the difference is slim, 24% versus 22%. In a bull market, scallop width shows no performance difference. I used the median length, not the average, to determine scallop width.

Average formation length. Scallops are about a month long, but since this figure is an average, your results may vary.

Table 44.6
Size Statistics

Description	Bull Market	Bear Market
Tall pattern performance	–19%	–26%
Short pattern performance	–17%	–21%
Median height as a percentage of breakout price	20.46%	31.63%
Narrow pattern performance	–18%	–22%
Wide pattern performance	–18%	–24%
Median length	25 days	26 days
Average formation length	30 days	31 days
Short and narrow performance	–19%	–23%
Short and wide performance	–14%	–19%
Tall and wide performance	–20%	–27%
Tall and narrow performance	–17%	–22%
Average width (days) of first through third scallop in a series	31, 29, 30[a]	31, 28, 41[a]
Average height of first through third scallop in series as percentage of breakout price	22%, 20%, 19%[a]	34%, 45%, 73%[a]
Narrow scallops: days to ultimate low	66	30
Wide scallops: days to ultimate low	56	26

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Table 44.7
Volume Statistics

Description	Bull Market	Bear Market
Rising volume trend performance	–17%	–23%
Falling volume trend performance	–19%	–24%
U-shaped volume pattern performance	–18%	–25%
Dome-shaped volume pattern performance	–18%	–22%
Neither U-shaped nor dome-shaped volume pattern performance	–18%	–20%[a]
Heavy breakout volume performance	–18%	–24%
Light breakout volume performance	–18%	–22%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Height and width combinations. In both bull and bear markets, scallops that are both tall and wide outperform. In a bear market, the difference is substantial, 27% versus 19% for the worst performer.

Series width and height. I show the average width and height of up to three scallops in a single downward price trend. In a bull market, scallops tend to get narrower and shorter as they appear lower in the price trend. In a bear market, scallops get wider and taller. In all cases, the sample counts are low, so the results may change.

Scallop width and time. Narrow scallops take longer to reach the ultimate low than wider ones, for some reason. I used the median length (shown a few rows above in the table) as the benchmark for width.

What can we learn about scallops by observing volume? Table 44.7 shows some answers.

Volume trend. Scallops with a falling volume trend performed better than did those with a rising volume trend, but the results were close.

Volume shapes. Volume shape influences performance only in a bear market. Those with U-shaped volume dropped 25% after the breakout. Those with dome-shaped volume dropped 22%. Select scallops with U-shaped volume for the best average performance.

Breakout volume. Breakout day volume heavier than the prior 30-day average helped bear market scallops outperform, but the results were close: 24% to 22%.

Trading Tactics

Table 44.8 shows trading tactics for descending and inverted scallops.

Table 44.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Used to predict a target price. Compute the difference between the formation's high and low. Subtract the difference from the breakout price (the lowest low). The result is the target price.
Buy signal	Occurs when price closes below the lowest low in the pattern without first rising above the high. That is the time to open a short position or sell a long holding.
Sell signal	If price rises to the price level of the start of the pattern, consider closing out your short position. If it rises above the pattern high, get out of the trade. Now!
Search for nearby support and resistance	Avoid nearby underlying support. Look for minor highs and lows, solid blocks of horizontal price movement, round numbers, trend lines, and chart pattern support and resistance.
Wait for confirmation	Wait for price to close below the formation low.

Measure rule. Use the measure rule as a guide to finding a price target after the breakout. To use it, compute the scallop height and project it downward from the breakout price. For example, the height of the scallop shown in Figure 44.4 is the price difference between B and C. The high is at 11.55 and the low is at 8.21, giving a difference of 3.34. Subtract this difference from the low, 8.21, giving a target of 4.87. Price reaches the target less than a month after the breakout.

Warning: This method works between 27% (bear markets) and 38% (bull markets) of the time. I consider values over 80% to be reliable, so this method falls well short. Be conservative in your estimates. Is a support zone near the target? If so, price is more likely to stop there.

Another check of the target is to turn it into a percentage decline. In this example, the predicted decline measures 41% (or 3.34/8.21). Since the scallop pattern in Figure 44.4 is in a bear market, Table 44.3 shows that fewer than 76% decline by at least 35% (the closest decline to 41%). That suggests the target is too far away and price is unlikely to decline that far.

Buy signal. Sell short when price closes below the formation low. In Figure 44.4, that is a *close* below point B. If you own a stock, consider selling, as prices are likely to continue dropping.

Sell signal. Consider covering your short if price retraces to the price level of point A in Figure 44.4, the start of the pattern. Always close out your short position if price rises to C, the highest high in the pattern. If that happens, the stock is saying you have made a mistake. Get out.

Search for nearby support and resistance. This step is important. If you know where support and resistance are, you can gauge how far prices will fall or rise, respectively. Trade or not trade accordingly.

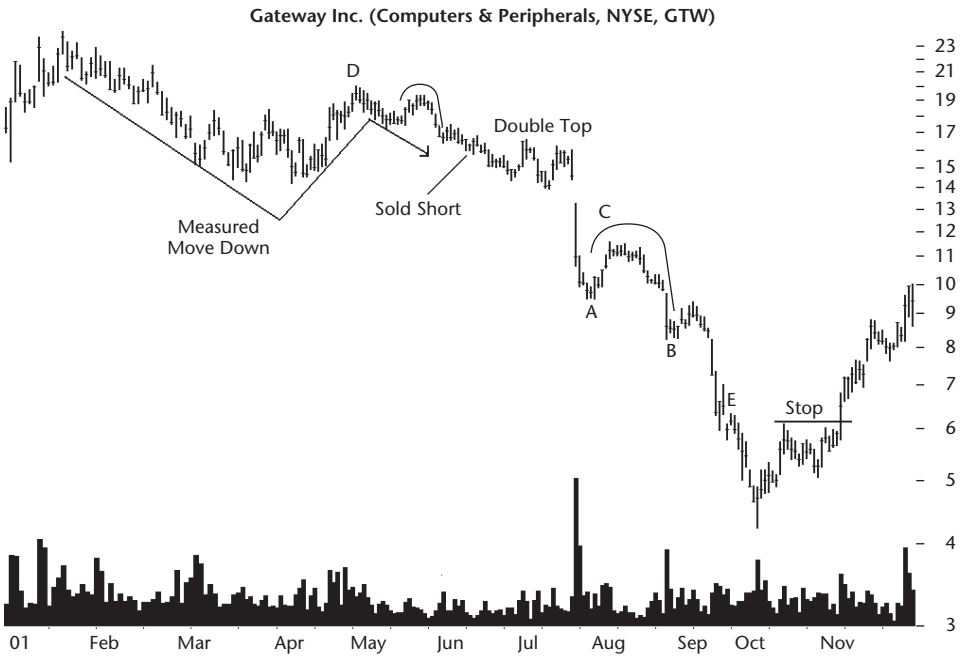


Figure 44.4 As described in the Sample Trade, Rich shorted this stock and a stop closed out his position.

When the stock hits nearby underlying support, that often causes a pullback. From Table 44.4, we know that when a pullback occurs, it interrupts downward momentum and hurts performance, so avoid trades with underlying support unless you have a compelling situation.

Wait for confirmation. Before you short a stock, do your homework and make sure it is worth shorting. Do not short a descending and inverted scallop until it confirms, meaning that price must close below the formation low. Only after confirmation does a scallop become a valid chart pattern.

Sample Trade

Figure 44.4 shows this chapter's sample trade. I base this one on a fictional trade because this is a new pattern and because shorting scares the dickens out of me. If you do not know what you are doing, stick to the long side. Here is how Rich used the pattern.

Rich is an experienced trader that dares to short a stock when the fundamentals warrant. In the bear market of 2001, when the tech stocks were being slaughtered wholesale, he started looking for stocks to short and found a candidate in Gateway. He did his fundamental research by checking out the company and others in the same industry. When he was comfortable with his choice, he waited for the right opportunity and found it when the descending and inverted scallop appeared in May.

He reviewed the identification characteristics and some of what he saw worried him. The overall price trend from January was downward except for the recent run-up in April (D). The May scallop looked good, like an inverted J with a smooth top. The bowl height as a percentage of the formation height turned out to be 65%, close to the 61.8% Fibonacci number. The ends of the formation were clean (meaning a sharp, visible turn) and the pattern looked proportional. Most knowledgeable traders would have no trouble spotting this scallop. Combined with the April peak (D), it also looked like a double top.

The day after price closed below the lowest low in the pattern, he shorted it and received a fill at 16. Immediately, he placed a stop just above the pattern high at 20.05, figuring that it was just above a round number (a common resistance zone) and just above two minor highs (the scallop top and the earlier peak in April).

Prices slid in a straight-line run, following the slope of the earlier downturn (January to March), a measured move down pattern that predicted a low of about 10. That decline gave him confidence to ride out the small double top in June.

Then earnings came out and the stock gapped downward in mid-July, forming another scallop in August. He calculated the price target for this lower scallop and saw that it was 4.87. He did not think prices would drop that far, but he monitored it closely, lowering his stop price along the way to capture his profits, just in case.

Price reached a low of 4.24 in early October then started rebounding. His stop was at 6.35, a few pennies above the minor high in September (E) and just above the early October peak. When price touched his stop, his broker closed out the position.

From the buy price of 16 to the stop price of 6.35, he made 60% in about 5 months of worrying.

For Best Performance

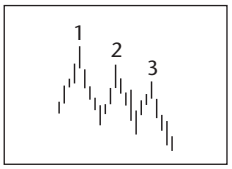
The following list includes tips and observations to help select descending scallops that perform better after the break out. Refer to the associated table for more information.

- Review the identification guidelines for correct selection—Table 44.1.
- Select scallops in a bear market. The average decline is better and it occurs in half the time—Table 44.2.
- Scallops in bear markets have lower failure rates—Table 44.3.
- Avoid pullbacks as they hurt performance—Table 44.4.
- Gaps help performance in a bull market—Table 44.4.

- Half the bear market scallops reach the ultimate low in the first 2 weeks—Table 44.5.
- Stocks in a bear market tend to bottom a month into the trade—Table 44.5.
- Select scallops both tall and wide—Table 44.6.
- Bull market scallops get narrower and shorter the lower they appear in a price trend. Bear market scallops get wider and taller—Table 44.6.
- Trade wide scallops. They reach the ultimate low quicker—Table 44.6.
- Select scallops with a falling volume trend—Table 44.7.
- In a bear market, pick scallops with U-shaped volume—Table 44.7.
- Trade bear market scallops with above average breakout volume—Table 44.7.

45

Three Falling Peaks



RESULTS SNAPSHOT

Downward Breakouts

Appearance	Three peaks, each with a price lower than the previous and proportional to one another	
Reversal or continuation	Short-term bearish reversal	
	Bull Market	**Bear Market**
Performance rank	8 out of 21	6 out of 21
Break-even failure rate	12%	4%
Average decline	17%	24%
Change after trend ends	56%	52%
Volume trend	Downward	Downward
Pullbacks	59%	62%
Percentage meeting price target	33%	32%
Surprising findings	Pullbacks hurt performance. Narrow patterns perform better than wide ones. Patterns with U-shaped volume do well.	
See also	Triple Tops	

I first learned about this chart pattern when Robert Fischer asked me to endorse his book, coauthored with Jens Fischer, *Candlesticks, Fibonacci, and Chart Pattern Trading Tools* (Wiley, 2003). He wrote that the three falling peaks chart pattern is a reliable performer. I agree, but it is especially effective in a bear market. There, the breakeven failure rate is 4% and the stock tumbles

24%, on average. That 24% measures from the lowest low in the pattern. If you were to measure from the top of the pattern, the decline would average 34% in a bull market and 44% in a bear market. Those losses are as frightening as riding a toboggan down a tree-studded hill.

If I own shares in a stock showing a three falling peaks chart pattern, I pay attention. If the pattern confirms, the stock is going down. The chart pattern reliably signals a trend change by acting as a reversal of the prior uptrend.

One disappointment with this chart pattern is how infrequently the measure rule works. About a third of the time, price reaches the target (which is the pattern height subtracted from the lowest low price).

Tour

What does a three falling peaks (3FP) chart pattern look like? I am sure you can conjure up an image of one, but Figure 45.1 shows two examples. The pattern consists of three peaks of equal size and shape, with each peak lower than the last.

Many times, you will find this pattern at the end of an uptrend (peak A1 marks the end), so it acts as a reversal. At other times, it will continue the downtrend like the B1 to B3 peaks show. Notice the U-shaped volume in the A1–A3 pattern. The U shape is rarer than the dome shape, but three falling peaks with U-shaped volume outperform their dome-shaped siblings.

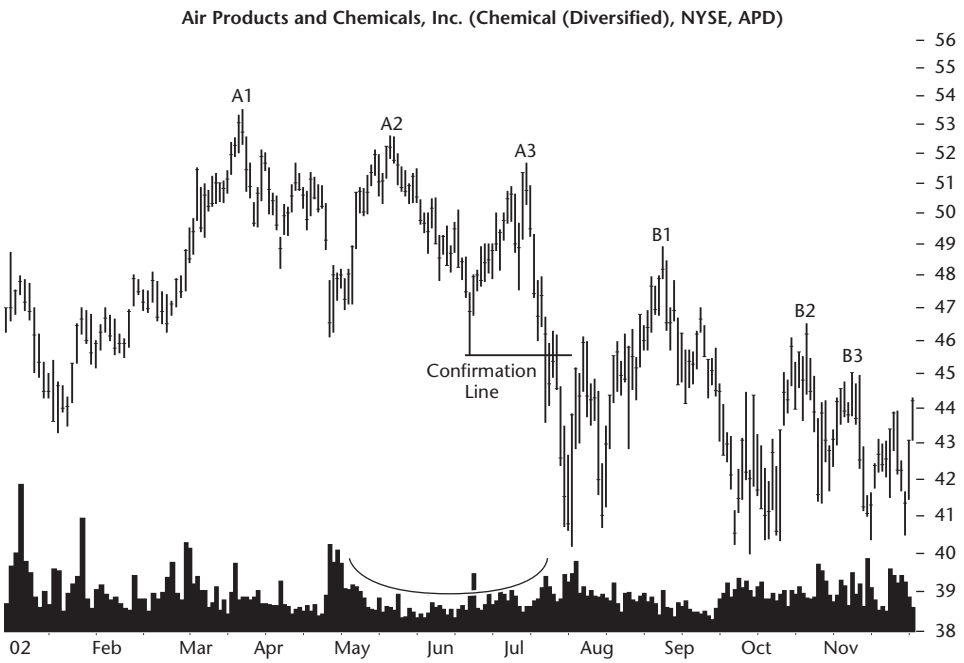


Figure 45.1 The three falling peaks chart pattern begins with the highest peak in the trend and continues with two successively lower peaks.

Is that all there is to know about identifying three falling peaks? Actually, it is a bit more complicated.

Identification Guidelines

Table 45.1 shows identification characteristics for 3FP patterns.

Upward price trend. Since we are looking for three peaks, you are going to have to do some counting. Begin counting with the highest high on the chart where an upward price trend ends and a stair-step decline begins.

Three falling peaks. The highest high in each peak must be lower than the prior peak. Allow no ties because we are not searching for double or triple tops. The three peaks need not follow a straight down-sloping trend line.

Proportion. The three peaks should appear similar in size and shape. Do not mix a wide and tall peak with a short, one-day spike. Consider Figure 45.2. Peaks A1, A2, and A3 appear similar in magnitude. They are all minor highs and each peak has a lower top than the one before. Notice that the B peaks are much smaller in size and shape but distinguishable as three independent peaks, not three peaks born from the same congestion region. Both A1 to A3 and B1 to B3 are valid three falling peaks patterns.

The reason for the rule about proportion is to avoid confusion about peak selection. Consider peaks C and D. To me, these look like something I missed with my lawnmower. They are minor highs, as are the other A peaks, but they are not in the same league. They are 1- or 2-day spikes that appear out of place with the rounded appearing A1 peak. They are not of the same magnitude or proportion. When selecting the three peaks, I ignored C and D and went with A1, A2, and A3.

Why not select peak E? This peak is robust enough to join the party, so you could call it the third peak. When A3 comes along, you might question the validity of the A1, A2, E pattern because A3 forms a higher high. The way I looked at the pattern, I liked the idea that you could draw a trend line along the A1, A2, and A3 peaks. Having E as the last peak seems out of place. Also, a

Table 45.1
Identification Characteristics

Characteristic	Discussion
Upward price trend	Start at the end of an upward price trend and look for three descending peaks.
Three falling peaks	Each peak must be below the prior peak.
Proportion	Each peak should look similar to its preceding peak. If you begin with wide peaks, select only wide ones.
Confirmation price	The pattern becomes valid only when price closes below the lowest low.

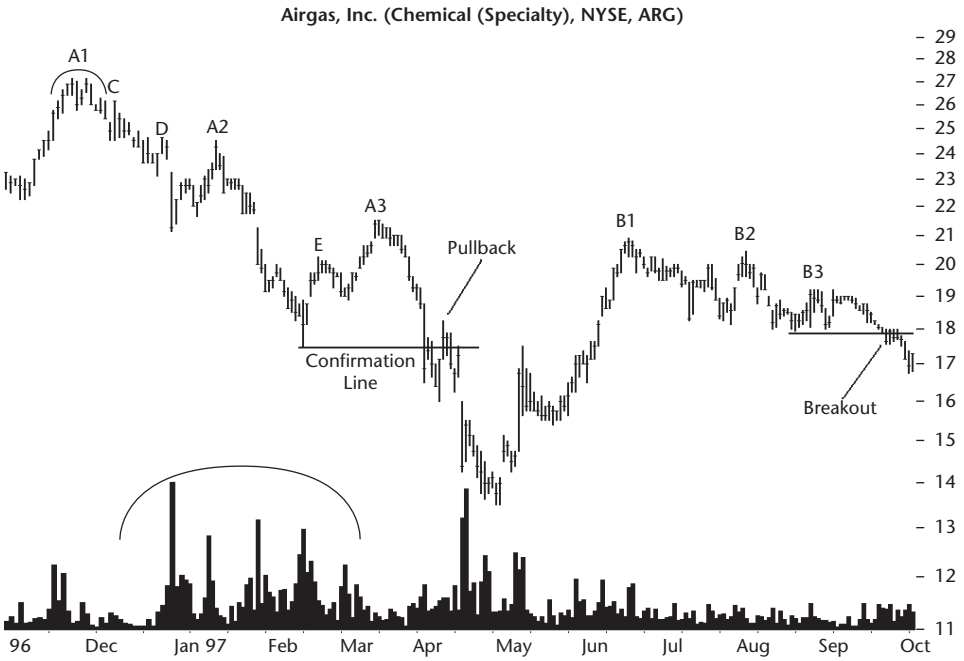


Figure 45.2 Peaks A1, A2, and A3 form three falling peaks, as do B1, B2, and B3. Peaks C and D are too small and narrow to be part of the A1–A3 pattern. Peak E is fine but the higher A3 peak suggests that A3 is a better selection as the last peak in the series.

higher peak (such as A3 when E was the third peak) before confirmation might invalidate the pattern. However, I disallowed patterns when price closed above the highest high (A1), not a close above the lowest high (E). You might consider a close above the lowest high as invalidating the pattern. I have not tested this possibility, but it might lead to better performance.

Confirmation price. Figure 45.2 shows the confirmation price as a horizontal line, even with the lowest low. The pattern confirms as a valid pattern when price closes below the line, usually the valley between the second and last peak. If the valley between peaks 1 and 2 marks the lowest low, then use the last valley as the confirmation price. That will get you in (to short) or out (of a long holding) sooner than if you wait for price to close below the lowest low.

Focus on Failures

Figure 45.3 is the basis of a quiz. Which of the three patterns (A, B, or C) are valid 3FP patterns? Let me work right to left, beginning with the C series. Is C1 to C3 a valid pattern? We are looking for three falling peaks and these three are rising. Thus, the C series is not a three falling peaks pattern.

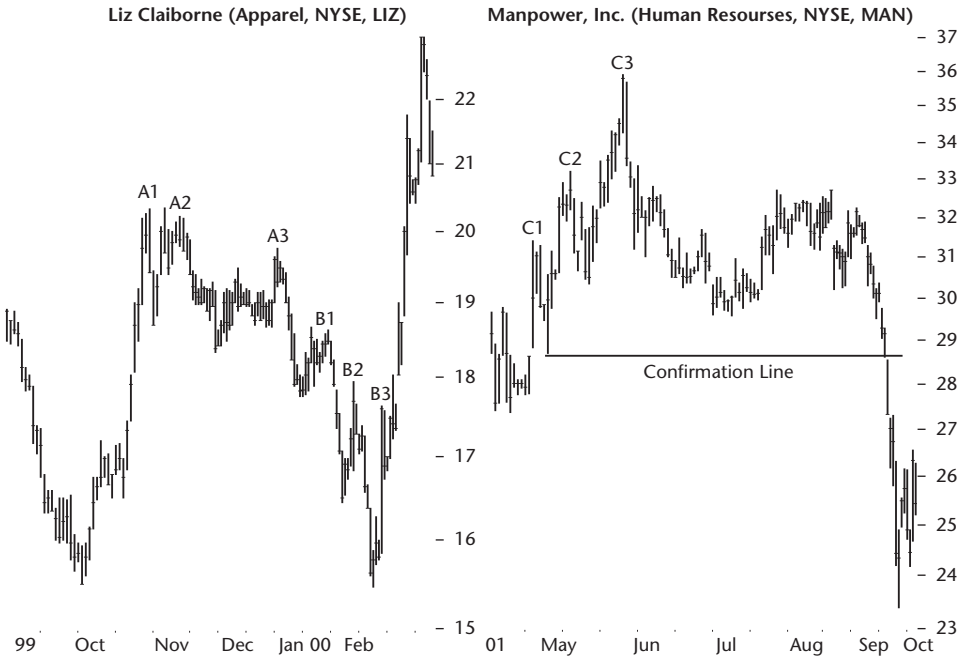


Figure 45.3 Which of these patterns is a valid three falling peaks chart pattern?

What about B1, B2, and B3? Here we have three peaks, each one below the prior one. B2 and B3 are narrow and B1 seems wide. You might exclude it on that basis alone (I would not because they look fine to me), but there is a much bigger problem. What is it? Confirmation. The pattern does not confirm because price never closes below the lowest low before climbing above the highest high. The B series of peaks is not a valid three falling peaks pattern.

What about A1, A2, and A3? The three peaks appear similar and the pattern confirms when price closes below the valley between A2 and A3. Guess what? It is also an invalid pattern. Why?

Look at peak A2. See that spike to the left of A2? It is part of A2 and it is taller than A1 by 2 cents. Thus, the second peak is higher than the first, so it is not a valid three falling peaks pattern. In my statistics, I did not include it as a valid pattern, but since it worked out well, you might research similar patterns (with a peak slightly above the prior peak) and see how they perform.

Figure 45.4 shows a common failure of the three falling peaks chart pattern. The stock drops after the breakout but only by a small amount before encountering support. In the figure, the A pattern forms at the top of a long uptrend that began in November 1999 (not shown). Since the B pattern is farther down the price chain, it must be closer to the ultimate low. It is, and price breaks out downward at E, falling just 2% below D, and then begins climbing. The climb to F measures a whopping 58%.

If you were to look back in time, you would see a large zone of support extending back as far as 1995. That support is not as clear as it could be, but the

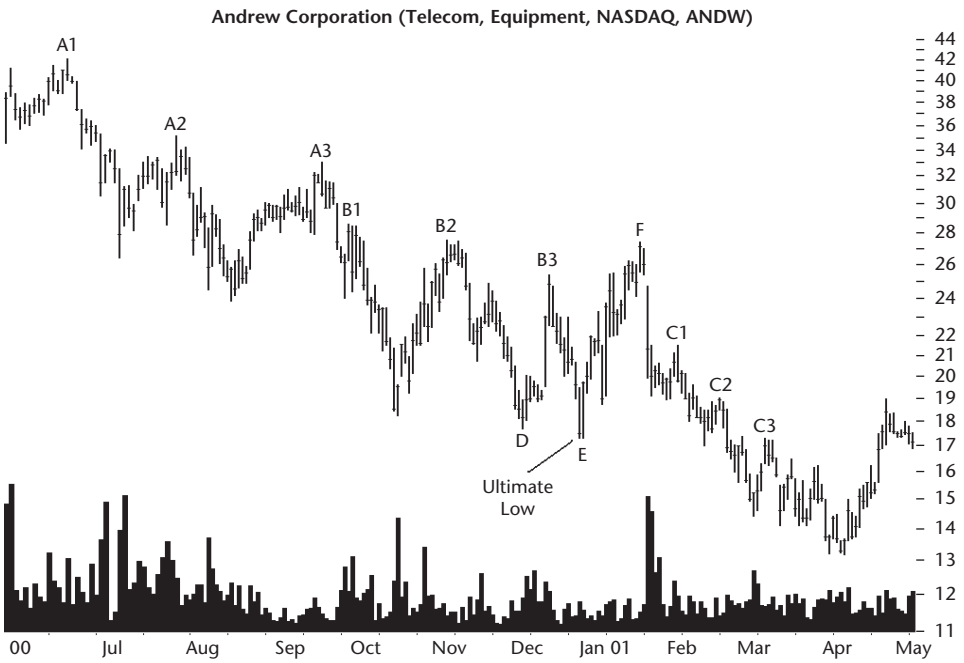


Figure 45.4 After declining just 2% below point D, the stock rallies 58% from E to F, signaling a trend change.

nearness in price of the October bottom and point D suggests an effective support zone. The stock tried to pierce the zone for the third time and failed.

The lesson from Figure 45.4 is twofold. First, the best trades often come after trend changes. The lower down the trend the three falling peaks pattern appears, the closer to the ultimate low price is. That is not always the case because of how I determine a trend change (a 20% rise off the ultimate low). The ultimate low, as in this case, can appear in the middle of a downtrend, not at the very end. Still the guideline is a good one.

Second, always search for underlying support before you trade, especially if you intend to short a stock. Once you place a trade, use a stop-loss order to protect your money.

Statistics

Table 45.2 shows general statistics for the 3FP pattern.

Number of formations. This pattern is plentiful and easy to find, so I did not have to scour many stocks. I found 527 patterns in about 200 stocks from late 1995 to late 2003.

Reversal or continuation. Most of the patterns appear at the end of an uptrend. They act as reversals. The others are part of a downtrend in progress, sometimes as the second or third 3FP chart pattern in a row. In a bull market,

Table 45.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	321	206
Reversal (R), continuation (C)	235 R, 86 C	146 R, 60 C
R/C performance	–17% R, –18% C	–24% R, –23% C
Average decline	17%	24%
Declines over 45%	11 or 3%	12 or 6%
Change after trend ends	56%	52%
Busted pattern performance	58%	53%
Standard & Poor's 500 change	–2%	–15%
Days to ultimate low	36	34

Note: Minus sign means decline.

continuations marginally perform better than reversals, but in a bear market, the results flip with reversals outperforming slightly.

Average decline. As one might expect, the 24% decline in a bear market handily beats the 17% drop in a bull market. This finding suggests that the pattern is more at home in a bear market than a bull one. It is a bearish pattern, after all.

Declines over 45%. Few 3FP chart patterns show unusually large declines—just 6% drop more than 45%. The small numbers are typical for bearish chart patterns.

Change after trend ends. Once the downward price trend ends at the ultimate low, prices rebound an average of 52% (bear market) and 56% (bull market). Those recovery rates are typical, but if you can tell when the trend changes, you can make a bunch of money.

Busted pattern performance. If prices drop by less than 5% after the breakout, buy. The rise in such situations averages well over 50%. Even if you are late to the trade, the profit may be exceptional.

Standard & Poor's 500 change. In both bull and bear markets, the S&P 500 index declined. This occurrence is unusual and it reflects the way I measured the decline. See the Glossary and Methodology chapter for more information on the measurement technique.

Notice how the large S&P decline—15%—helped the bear market performance (average decline of 24%). The lesson here is to always trade with the market trend. Before placing a trade, ask yourself if the market is going to rise or fall. Go long or short accordingly.

Days to ultimate low. It took about a month for prices to reach the ultimate low after the breakout. Since prices declined 24% in a bear market and 17% in a bull market but took about the same time, the bear market decline must have been steeper. That feature means more trades per year in a bear market.

Table 45.3
Failure Rates

Maximum Price Decline (%)	Bull Market	Bear Market
5 (breakeven)	38 or 12%	8 or 4%
10	101 or 31%	30 or 15%
15	154 or 48%	67 or 33%
20	210 or 65%	94 or 46%
25	246 or 77%	123 or 60%
30	279 or 87%	149 or 72%
35	290 or 90%	169 or 82%
50	311 or 97%	196 or 95%
75	321 or 100%	205 or 100%
Over 75	321 or 100%	206 or 100%

Table 45.3 shows failure rates for this chart pattern. Notice that the bear market rates are lower than the bull market ones. For best performance, trade this pattern in a bear market. Also, notice how the failure rate climbs for small changes in the maximum price decline. For example, in a bear market, 4% of the 3FP patterns fail to drop more than 5% after the breakout. This percentage climbs to 15% failing to drop more than 10% and doubles to 33% failing to decline more than 15%. Thus, the rate quadruples and then doubles, but that rate of increase is typical for many chart pattern types.

What the numbers show is that the decline may not be substantial before a rebound occurs, because much of the decline has already taken place. By that, I mean the decline from the first to the third peak is not included in the table, only the decline after the breakout.

Table 45.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. Bear markets take almost twice as long to break out than do bull markets. I consider this finding unusual. In a bull market, the stock is declining but the general market is rising; that is like swimming against the current. Which takes longer to reach a boat anchored offshore, when you swim with the current (bear market, down breakout) or against it (bull market, down breakout)? Maybe the situation is so dire that in a bull market the stock plunges. However, if that were the case, the time to the ultimate low would be less than in a bear market, but it is not (36 days versus 34). I cannot explain the result.

Yearly position. Most of the time, the breakout appears in the lowest third of the yearly price range. Since this is a bearish chart pattern with the breakout at the pattern's low, the results make sense.

Yearly position, performance. In a bull market, the best performance comes from patterns in the middle of the yearly price range. In a bear market, the *worst* performers appear in the middle of the range.

Table 45.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	17 days	27 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L45%, C41%, H14%	L59%, C33%, H8%
Percentage decline for each 12-month lookback period	L16%, C18%, H17%	L24%, C22%, H30%[a]
Pullbacks	59%	62%
Average time to pullback ends	9 days	10 days
Average decline for patterns with pullback	15%	23%
Average decline for patterns without pullback	20%	26%
Performance with breakout gap	–18%	–23%[a]
Performance without breakout gap	–17%	–24%
Average gap size	$0.44	$1.23

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Pullbacks. A pullback occurs just over half the time and takes between 9 and 10 days, on average, to complete the journey back to the breakout price. When a pullback occurs, performance suffers. For example, in a bull market, patterns with a pullback drop 15% after the breakout. Without a pullback, the decline averages 20%.

Gaps. Breakout day gaps are rare but when they occur in a bull market, postbreakout performance improves slightly. In a bear market, performance suffers but the results are close and they have few samples.

The gap size in a bear market is almost triple the size in a bull market. If I had to explain this anomaly, I would say that a downward breakout in a bear market would tend to be more violent than a downward breakout in a bull market, simply because of the market trend helping or retarding the breakout day gap.

Table 45.5 shows a frequency distribution of time to the ultimate low. Both market conditions act similarly, but notice that about 40% of the patterns reach the ultimate low in less than 2 weeks. In 3 weeks time, half or more of the patterns have bottomed. This finding suggests a high tendency for price to

Table 45.5
Frequency Distribution of Days to Ultimate Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	27%	16%	13%	7%	6%	5%	4%	3%	1%	3%	14%
Bull market	26%	14%	10%	7%	7%	7%	2%	2%	3%	3%	17%

drop far and fast. It may not, but that is the way to trade it. Get in quickly and pay attention because you may need to exit just as fast.

If you hold a stock and it shows a 3FP, then collect your courage and sell the stock. You do not want to be caught in the downdraft as prices tumble.

Table 45.6 shows size statistics.

Height. The numbers are close enough as to be statistically the same.

Width. Wide patterns perform better than narrow ones in both bull and bear markets. I used the median length as the separator between narrow and wide. For example, in a bear market, narrow patterns declined 25% after the breakout, but wide ones dropped 23%.

Average formation length. Bear market patterns are longer (by 10 days) than bull market ones.

Height and width combinations. Since short and narrow patterns perform best individually, you would expect the combination to perform better. They do not. Consider the combination of height and width to be just another individual performance, like measuring the performance of the 3FP pattern in the third dimension (adding depth).

The best performers are short and narrow in a bull market, and tall and narrow in a bear market. However, the performance differences are slight, suggesting the order may change with additional samples.

Table 45.7 shows volume-related statistics for the 3FP chart pattern.

Volume trend. There is no performance difference between patterns with a rising volume trend and a falling one.

Volume shapes. Performance improves when the 3FP has U-shaped volume. In a bull market, for example, the average decline is 20%. For patterns

Table 45.6
Size Statistics

Description	Bull Market	Bear Market
Tall pattern performance	–17%	–24%
Short pattern performance	–18%	–24%
Median height as a percentage of breakout price	23.50%	30.92%
Narrow pattern performance	–18%	–25%
Wide pattern performance	–17%	–23%
Median length	38 days	46 days
Average formation length	47 days	57 days
Short and narrow performance	–18%	–24%
Short and wide performance	–17%	–23%
Tall and wide performance	–17%	–23%
Tall and narrow performance	–17%	–25%

Note: Minus sign means decline.

Table 45.7
Volume Statistics

Description	Bull Market	Bear Market
Rising volume trend performance	–17%	–24%
Falling volume trend performance	–17%	–24%
U-shaped volume pattern performance	–20%	–25%
Dome-shaped volume pattern performance	–16%	–23%
Neither U-shaped nor dome-shaped volume pattern performance	–17%	–23%[a]
Heavy breakout volume performance	–17%	–24%
Light breakout volume performance	–19%	–23%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

with dome-shaped volume, the decline averages 16%. For the best average performance, select patterns with U-shaped volume.

Breakout volume. Light breakout volume improves performance in a bull market and hurts it in a bear market. I consider trends that agree across market conditions to be more significant than those, like this one, that contradict. Also, the performance difference is slight. Thus, do not bet the farm that you will have an extended decline based solely on breakout volume.

Trading Tactics

Table 45.8 shows 3FP trading tactics.

Measure rule. Use the formation height applied to the downward breakout to determine how far prices will decline. Unfortunately, this method works only a third of the time. As an example, consider Figure 45.5. The highest high is at point 1 (49) and the lowest low, point A (33), gives a height of 16. Subtracting the height from the lowest low gives a target of 17. The figure does not show it, but price met the target and continued much lower.

Underlying support. Before trading a 3FP, check for underlying support. Underlying support will tell you how far prices are likely to decline. If the measure rule predicts a target price near a support zone, then that gives more confidence that prices will stop near the target. If underlying support is too close to the breakout or too robust, then search for another trade. Prices usually have enough power to push through nearby support (those less than 5% away).

Overhead resistance will tell you how much you stand to lose when things go wrong. Look for a nearby minor high at which to place a stop; just above the lowest peak is a good place. If the stop is too far away from the breakout, then look elsewhere for a more promising trade or close the stop distance (move it closer to the breakout).

Table 45.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Works about a third of the time to predict a target price. Compute the formation height from the highest high to lowest low in the pattern and then subtract the result from the lowest low.
Underlying support	Before trading, check for support zones and avoid trading a stock with nearby support.
Early entry	If the first valley is below the second, use the second one as the confirmation price instead of the lowest low in the pattern.
Trend line break	Draw a trend line connecting the two valleys. If it slopes upward, then a close below the line signals a breakout and confirms the pattern.
Wait for confirmation	Wait for price to close below the breakout (the lowest low or trend-line break) before shorting the stock.

Early entry. If the second valley is higher than the first, use the second (the higher of the two) as the confirmation or breakout price. A close below the higher of the two valleys will get you in earlier than waiting for a close below the lowest low. Figure 45.5 shows an example. Point A is the lowest low in the three falling peaks pattern, but an order to short the stock at point B will get you in at a more favorable price.

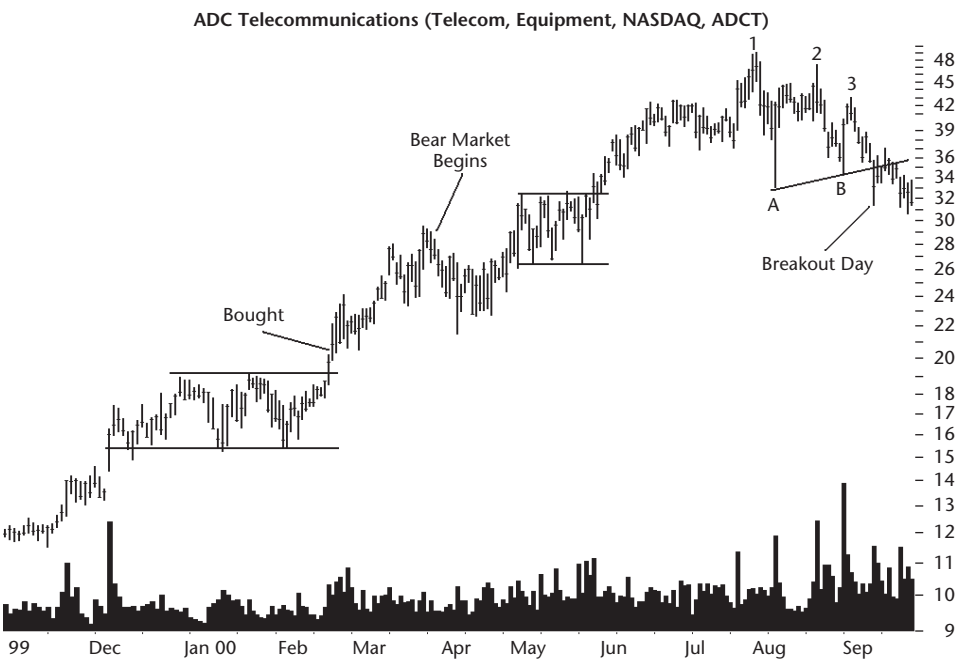


Figure 45.5 When price pierced the trend line, AB, it confirmed the three falling peaks chart pattern, and that event was the sell signal.

Trend-line break. Using this method is similar to early entry trading. When the lowest low appears between the first two peaks, draw a trend line connecting the two valley lows. A close below the trend line means a downward breakout and time to sell a long position or open a short one. The AB line in Figure 45.5 represents the trend line. It must slope upward, like that shown, in order to be effective. Disregard down-sloping trend lines and use the lowest low in the pattern as the breakout price.

Wait for confirmation. Wait for a close below the lowest low in the pattern before trading the 3FP chart pattern. However, ignore this guideline if using the early entry or trend line break as the trading signal. Only when price closes below the lowest low does the pattern become valid. In too many cases that I have seen, the pattern does not confirm and prices shoot upward. A short sale on such a pattern quickly turns into a loss. Always wait for confirmation unless you have a good reason for trading early.

Sample Trade

Consider how Melody traded the stock shown in Figure 45.5. The day after the stock staged an upward breakout from the December–February trading range, she bought, receiving a fill at 20. She did not know that a bear market (in the S&P 500 index) would begin in March 2000, a month after she bought.

Nothing along the way worried her about the stock's performance. She viewed the retrace in an uptrend (March and April) when the bear market began as part of the normal stair-step climb that stocks make. Prices pierced another trading range in May, suggesting continued strength in the stock.

When price peaked at point 1 and dropped to A on high volume, she took notice. Her study of the markets suggested that large price swings on high volume often mean a trend change. When price made a third lower peak (3), she drew a trend line connecting the two valleys (A and B), forming an up-sloping trend line. The day after price closed below the line, she sold her holdings and received a fill at 34.27. She made 71% on the trade.

The stock continued dropping, reaching a low of 1.02 in early September 2002, for a decline of 97% below where she sold the stock.

For Best Performance

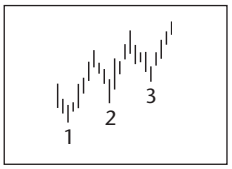
The following list includes tips and observations to help select three falling peaks that perform better after the break out. Refer to the associated table for more information.

- Review the identification guidelines for correct selection—Table 45.1.
- Trade this pattern in a bear market for the largest average decline—Table 45.2.

- Trade busted patterns—Table 45.2.
- The pattern in a bear market shows the lowest failure rates—Table 45.3.
- Select patterns with breakouts in the middle of the yearly trading range (bull market) or near the yearly high (bear market)—Table 45.4.
- Pullbacks hurt performance, so avoid trades with nearby underlying support—Table 45.4.
- Prices bottom quickly in many cases, so if you decide to short, get in early—Table 45.5.
- Select narrow patterns—Table 45.6.
- Pick patterns with U-shaped volume—Table 45.7.

46

Three Rising Valleys



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Three minor lows, each higher than the prior one	
Reversal or continuation	Short-term bullish reversal	
	Bull Market	**Bear Market**
Performance rank	4 out of 23	13 out of 19
Break-even failure rate	5%	9%
Average rise	41%	22%
Change after trend ends	–33%	–33%
Volume trend	Downward	Downward
Throwbacks	60%	65%
Percentage meeting price target	58%	42%
Surprising findings	Patterns with breakouts near the yearly high perform best. Tall patterns perform better than short ones. Patterns with a rising volume trend and U-shape volume do well.	
See also	Triple Bottoms	

Like the three falling peaks chart pattern, Robert Fischer and Jens Fischer in their book, *Candlesticks, Fibonacci, and Chart Pattern Trading Tools* (Wiley, 2003) introduced me to the three rising valleys chart pattern.

The performance from this chart pattern is quite good in a bull market, with a low failure rate and high average rise. In a bear market, the performance is about what you would expect from a countertrend breakout. Throwbacks occur in nearly two out of three trades. That rate is high enough that you should expect one when you trade.

Tour

What does a three rising valleys (3RV) chart pattern look like? Figure 46.1 shows a good example of one. Most often, the pattern will appear in a rising price trend. The one shown comes after a short-term downtrend (starting with the July peak) but before that, prices climbed for almost a year.

The three valleys in the figure are pronounced, and their lows almost follow a trend line upward. Three valleys tracing a straight line is not a requirement for this pattern but most often, that is what you will see. Your eye tends to line up the valleys so you will pick minor lows that seem similar to one another.

Volume in the figure shows a dome shape in the middle of the pattern and that shape predominates 60% of the time, but U-shaped volume suggests better performance.

The following section further discusses identification guidelines.

Figure 46.1 The three rising valleys chart pattern.

Identification Guidelines

Figure 46.2 shows an example of the 3RV chart pattern. This one occurs well into the upward price trend, and there are others not shown in the figure that occurred earlier. Points 1, 2, and 3 mark the minor lows. Each valley is above the prior one. Their shape is also similar—wide in this example, not narrow like the cluster in June (point A and to the right).

The pattern confirms when price closes above the highest high in the pattern. In this example, prices throw back a few days after the breakout and then continue climbing until peaking in September. That peak marks the ultimate high for a rise of 34% in a bear market. Volume is dome shaped in this example, which is also the most common shape.

Figure 46.3 shows what a 3RV pattern looks like in a downtrend. The pattern is part of a measured move down but the valleys act as a continuation (consolidation) of the downtrend, not a reversal.

Table 46.1 shows identification characteristics for 3RV pattern.

Upward price trend. Look for the pattern in an upward price trend. That is where they appear most often. However, those appearing in downtrends actually perform better (a 45% rise for downtrends in a bull market compared with a 36% rise for uptrends) because they act as reversals. If you can find one that reverses the downtrend, buy into the stock and ride the new uptrend. Be sure to use stops to protect your position in case the market decides to teach you a lesson.

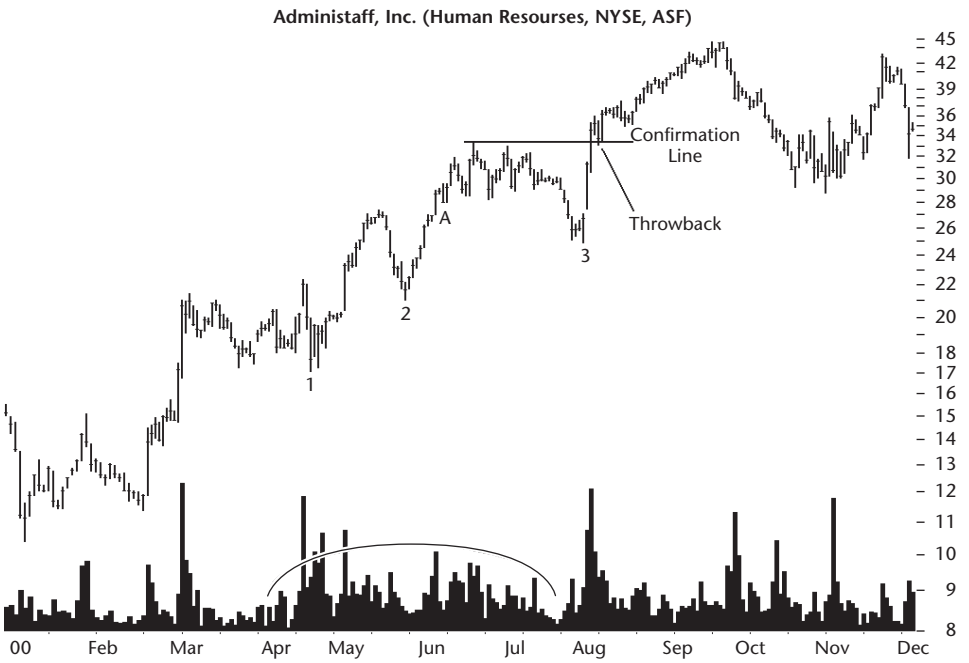


Figure 46.2 Often, the three rising valleys chart pattern will appear in an upward price trend.

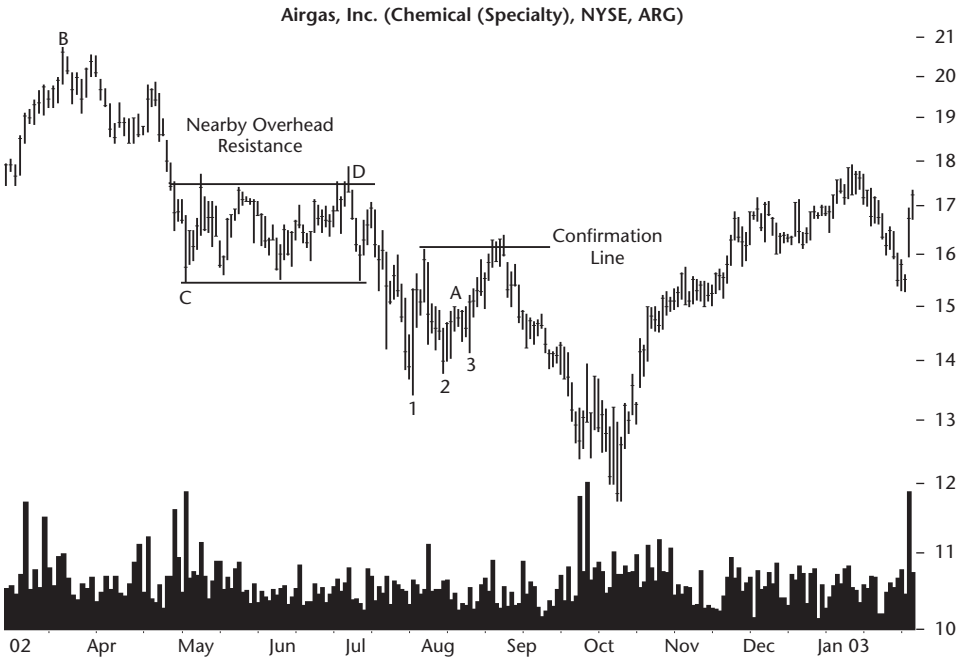


Figure 46.3 Three rising valleys appear in a downward price trend. Price confirms the pattern when it closes above the highest high.

Three rising valleys. Each valley bottom should be above the prior valley, signaling a continued price rise. As Figure 46.3 shows, however, the post-breakout rise may be meager, especially in a bear market.

Proportion. Each valley should look similar to the prior one. In Figure 46.3, the three minor lows are 3 days wide. In Figure 46.2, the turns are more graceful and wider, and the minor lows are more significant. Avoid mixing a wide minor low with a narrow one. The statistics shown in this chapter assume each valley appears like the other two. It may be that mixing bottom shapes like points 1, 2, and A in Figure 46.2 will succeed, but the figure gives one example of the decline you would suffer as prices drop to valley 3 (a 16% decline from the high at A).

Table 46.1
Identification Characteristics

Characteristic	Discussion
Upward price trend	Look for three minor lows in a row, usually found in an uptrend.
Three rising valleys	Each valley must be above the prior one.
Proportion	Each valley should look similar to the last one. If you begin with wide, rounded valleys, select only similar looking ones.
Confirmation price	The pattern becomes valid only when price closes above the highest high.

Confirmation price. Always wait for confirmation. That is when price closes above the highest high in the pattern. It confirms the three valleys as a valid chart pattern worth trading. Entering the trade sooner increases your risk, especially if price was trending down leading to the chart pattern.

There are exceptions, of course, and the Trading Tactics section discusses them. Figure 46.3 shows an example of when getting in sooner reduces your risk and increases profits. When the peak between valleys 2 and 3 is below the highest high, then the last peak (point A) serves as the new confirmation price. In the example shown in Figure 46.3, that would change a 2%, rise into a 12% gain. That is not much, but you can make a million bucks by first saving the pennies.

Focus on Failures

The three rising valleys chart pattern has a small break-even failure rate, but it still fails. Figure 46.3 shows one example. The minor lows marked 1, 2, and 3 show rising valleys, each low above the prior one. The minor lows look similar in shape, narrow spikes in this case. The pattern confirms when price closes above the highest high.

Why did this rising valley fail? I find it valuable to take the big picture and zoom in. Since the pattern begins at point 1, I would notice the measured move down pattern marked by turns B and C (the first leg); the corrective phase, C to D; and the second down leg, D to 1. After a measured move down, the most common retrace is a climb back into the corrective phase, C to D. After that, a resumption of the original trend (downward in this example) is a good bet.

Since the corrective phase is a solid block of horizontal price movement, it presents a formidable challenge to any price mountaineer willing to attempt the climb. I would not invest in this pattern because of nearby overhead resistance and the likelihood of price dropping, resuming the downtrend.

Note point A, the early confirmation price. A close above this peak confirms the pattern and leads to a gain of 12%, well above the 2% gain measured from the confirmation line shown in Figure 46.3.

Statistics

Table 46.2 shows general statistics for the 3RV pattern.

Number of formations. Much to my surprise, the number of patterns splits evenly between bull and bear markets. I used fewer than 100 stocks from 1999 to 2003 to find 496 patterns.

Reversal or continuation. As Table 46.2 shows, most of the time the pattern acts as a reversal of the prevailing (downward) price trend. Reversals

Table 46.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	248	248
Reversal (R), continuation (C)	165 R, 83 C	181 R, 67 C
R/C performance	46% R, 33% C	22% R, 24% C
Average rise	41%	22%
Rises over 45%	83 or 33%	41 or 17%
Change after trend ends	–33%	–33%
Busted pattern performance	–34%[a]	–30%[a]
Standard & Poor's 500 change	15%	1%
Days to ultimate high	125	94

Note: Minus sign means decline.

[a]Fewer than 30 samples.

are also easiest to spot. In a bull market, reversals perform better than continuations, but the situation flips in a bear market: reversals perform worse.

Average rise. The average rise is 41% in a bull market and 22% in a bear market. The bull market result is above the average shown for other bullish chart patterns, but the bear market result is a bit low. The numbers suggest that you trade this pattern in a bull market and only invest in a bear market if the situation is compelling.

Rises over 45%. Over a third of the bull market patterns show rises over 45%. This is a strong showing. The bear market has half the number making outstanding climbs. That finding is another reason to avoid this pattern in a bear market.

Change after trend ends. Once price reaches the ultimate high, it drops an average of 33%, regardless of market conditions. The numbers suggest that if you have a failed pattern, short the stock, and pray for a lower price. Figure 46.3 show how effective this strategy could be.

Busted pattern performance. Those patterns that climb less than 5% and then reverse go down by 30% to 34%. Since a busted pattern is easy to recognize, consider trading one when you see it. If prices line up like bottoms 1, 2, and 3 in Figure 46.3, connect the bottoms with a trend line and short the stock when price closes below the trend line.

Standard & Poor's 500 change. The general market helped push price higher in both bull and bear markets. The rise in a bear market is due to chance—the dates from the breakout to the ultimate high just happened to be up days for the index.

Days to ultimate high. It takes considerably longer in a bull market to reach the ultimate high than in a bear market (about 4 months versus 3 months). If the climb in a bear market followed the same slope as in a bull market, the

22% rise would have taken 67 days, not 94. Thus, the bear market climb is at a lower slope. Active traders, who want to maximize the number of trades each year, should concentrate on trading this pattern in a bull market.

Table 46.3 shows failure rates for the 3RV pattern. The bull market numbers are lower than the bear market ones. For example, 5% of bull market patterns fail to rise at least 5% after the breakout. This figure triples to 15% failing to rise at least 10%. In a bear market, over half the patterns fail to rise at least 20%.

Despite what appears to be an alarming increase in failures for small price moves, the numbers are quite reasonable when compared to other chart patterns. Other formations start out with low failure rates, triple, and then double for moves from 5% to 15%. With 3RV, the increase is not as steep.

What do the numbers mean? If your cost of trading is 5% and you want to make 15% (20% total), how often does the 3RV pattern fail? Answer: 34% in a bull market and 52% in a bear market. The result says two things: Avoid trading this pattern in a bear market and two out of three patterns, on average, will reach your target if you trade them perfectly.

Of course, you will not trade each one perfectly and your losers will pull down your average gains, so you will have to allow for that. Trade the pattern on paper and see if you can consistently make money. If you cannot show profits on paper, then either you are doing it wrong or you should marry someone with lots of money.

Table 46.4 shows breakout- and postbreakout-related statistics for the 3RV pattern.

Formation end to breakout. It takes just over 2 weeks, on average, for price to climb from the last valley low to the highest high in the pattern.

Yearly position. With the breakout at the top of the pattern, most rising valleys appear within a third of the yearly high.

Table 46.3
Failure Rates

Maximum Price Rise (%)	Bull Market	Bear Market
5 (breakeven)	12 or 5%	22 or 9%
10	38 or 15%	60 or 24%
15	58 or 23%	95 or 38%
20	85 or 34%	130 or 52%
25	106 or 43%	151 or 61%
30	118 or 48%	169 or 68%
35	136 or 55%	188 or 76%
50	173 or 70%	218 or 88%
75	203 or 82%	235 or 95%
Over 75	248 or 100%	248 or 100%

Table 46.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	20 days	15 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L8%, C30%, H62%	L13%, C34%, H52%
Percentage rise for each 12-month lookback period	L34%[a], C34%, H43%	L21%, C22%, H23%
Throwback	60%	65%
Average time to throwback ends	10 days	9 days
Average rise for patterns with throwback	36%	23%
Average rise for patterns without throwback	50%	22%
Performance with breakout gap	37%	26%
Performance without breakout gap	42%	22%
Average gap size	$0.44	$0.32

[a]Fewer than 30 samples.

Yearly position, performance. The best performing patterns have breakouts near the yearly high. This is wonderful news if you are a momentum player: Buy high and sell higher.

Throwbacks. Throwbacks occur often, over 60% of the time, and it takes 9 or 10 days, on average, for prices to return to the breakout price. When a throwback occurs, performance suffers in a bull market. For example, 3RVs with throwbacks climbed an average of 36% after the breakout. Those without throwbacks climbed 50%. In a bear market, the results reverse but the performance difference is small.

Gaps. In a bull market, a breakout day gap hurts performance. In a bear market, it helps performance. However, with additional samples, the bear market result might change (it uses 36).

Table 46.5 shows a frequency distribution of time to the ultimate high. Both bull and bear markets perform similarly with few reaching the ultimate high in the first week, leaving over 40% to top out after 70 days into the trade.

Look at the slight uptick 35 days after the breakout. Both bull and bear markets show a few more patterns reaching the ultimate high during that time. Thus,

Table 46.5
Frequency Distribution of Days to Ultimate High

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	16%	7%	3%	7%	8%	4%	4%	4%	4%	3%	40%
Bull market	13%	5%	4%	4%	7%	4%	6%	2%	4%	6%	44%

if the stock looks like it is rolling over a month after you buy, consider selling. This phenomenon is not unique to this pattern, but why it occurs is a mystery.

Table 46.6 shows statistics related to size.

Height. Tall patterns perform better than short ones. In a bull market, the performance difference is widest, 45% versus 37%, respectively. For the best performance, trade tall patterns.

Width. Narrow patterns perform better in a bull market and wide ones do marginally better in a bear market. I used the median length, not the average, as the separator between narrow and wide.

Average formation length. The average 3RV chart pattern is about the same length in both bull and bear markets: just short of 2 months long.

Height and width combinations. In a bull market, 3RVs that are both tall and narrow have postbreakout rises of 53%. In a bear market, tall and wide patterns perform slightly better with rises averaging 23%. Avoid trading 3RVs that are short and wide in a bull market (34% rise).

Table 46.7 shows volume-related statistics.

Volume trend. Patterns with a rising volume trend perform better than do those with a falling volume trend. The largest difference is in a bull market, 45% versus 38%.

Volume shapes. Patterns with U-shaped volume outperform the other combinations in both bull and bear markets. In a bull market, the postbreakout rise averages an astounding 52%! That is well above the 41% average rise for all bullish 3RVs.

Breakout volume. Light breakout volume helps push prices higher. For example, in a bull market, patterns with light volume soar 53%. Those with heavy breakout volume climb just 38%. To many traders the results may sound

Table 46.6
Size Statistics

Description	Bull Market	Bear Market
Tall pattern performance	45%	23%
Short pattern performance	37%	22%
Median height as a percentage of breakout price	23.80%	24.11%
Narrow pattern performance	44%	22%
Wide pattern performance	39%	23%
Median length	43 days	42 days
Average formation length	54 days	53 days
Short and narrow performance	39%	22%
Short and wide performance	34%	22%
Tall and wide performance	42%	23%
Tall and narrow performance	53%	22%

Table 46.7
Volume Statistics

Description	Bull Market	Bear Market
Rising volume trend performance	45%	26%
Falling volume trend performance	38%	21%
U-shaped volume pattern performance	52%	24%
Dome-shaped volume pattern performance	38%	22%
Neither U-shaped nor dome-shaped volume pattern performance	33%	18%[a]
Heavy breakout volume performance	38%	22%
Light breakout volume performance	53%	24%

[a]Fewer than 30 samples.

odd, but I have noticed that heavy breakout volume (upward breakouts only) tends to cause a throwback. If everyone buys at the breakout price, who is left to buy in following days? Without buying demand, selling pressure forces price back down, completing the throwback. The throwback hurts upward momentum and postbreakout performance suffers.

Trading Tactics

Table 46.8 shows 3RV trading tactics.

Measure rule. Compute the formation height and add the result to the breakout price. For example, the three rising valleys marked 1, 2, and 3 in Figure 46.4 use the price difference between points 7 ($9.52) and 1 ($7.38) for a height of 2.14. Add the height to the breakout price (the highest high) to get a

Table 46.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute the formation height (highest high minus lowest low) and add it to the breakout price. The result is the target price.
Trade reversals	If you can tell that the end of a downtrend has arrived, buy the stock.
Early entry	If the pattern has the highest high between the first two valleys, use the last peak in the chart pattern as the breakout price.
Trend-line break	A close above a down-sloping trend line joining the highs between the valleys can serve as the breakout price.
Wait for confirmation	Wait for price to confirm the pattern. Usually this event is a close above the highest high.

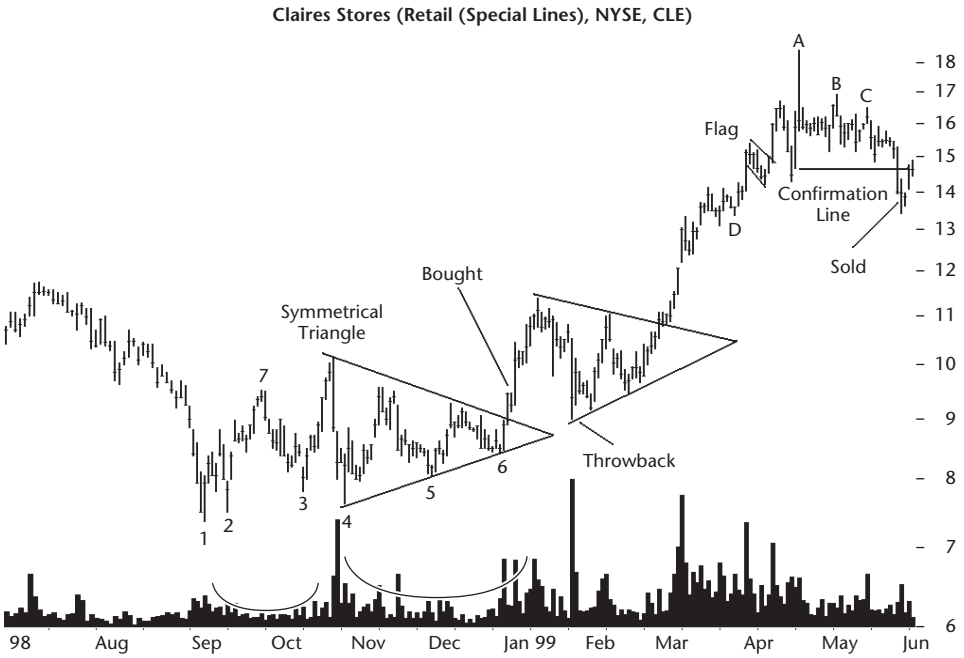


Figure 46.4 A three rising valleys pattern turned into a symmetrical triangle. As described in the Sample Trade, Joshua sold the stock when it started sinking lower with technical indicators showing divergence.

target of 11.66. Price hits the target in early March. The measure rule works just 58% of the time in a bull market and only 42% of the time in a bear market, so be conservative in your estimates.

As a check on the projected gain, turn the height into a percentage move. In this example, the height of 2.14 as a percentage of the high (9.52) would mean a rise of 22%. Table 46.3 indicates that about 38% (midway between 34% and 43%) will fail to rise at least 22% in a bull market. That finding means 62% will hit the target. If the hit rate gets much lower, then reduce your target price and look for nearby overhead resistance where price might stall.

Trade reversals. Price reversals perform better than continuations of the trend in a bull market, because a reversal catches a new trend at its lowest point. Look for underlying support, perhaps a flat base with the 3RV changing the horizontal price movement into an uptrend. Always use stops in case you are wrong because calling a trend change in a downtrend is a risky move.

Early entry. Usually, the highest high in the pattern marks the breakout price. Sometimes, like that shown in Figure 46.3, the highest high occurs between the first two valleys. Use the high between the second and third valley as the confirmation price. That strategy will get you into the trade sooner than using the highest high.

Trend-line break. You can also use a down-sloping trend line drawn between the two peaks in the pattern. Figure 46.4 shows an example as the top of a symmetrical triangle. Buy when price closes above the down-sloping trend line.

Wait for confirmation. Whichever method you use to determine the breakout price, always wait for confirmation (that is, wait for the breakout). Most of the time, a breakout will be a close above the highest high in the pattern. An early entry or trend-line break also confirms the pattern. Not waiting for confirmation is a game best left to amateurs and novice traders because of the low probability of success.

Sample Trade

Joshua made the trade shown in Figure 46.4. In late October, he noticed the 3RV pattern labeled 1, 2, and 3. Since price at point 4 dropped below point 3, it made him nervous trading the pattern. However, he liked that price tested the point 1 low (at 4) but rebounded (one of three conditions signaling a trend change; the other two being price pushing up through a down-sloping trend line and a close above a prior minor high).

He waited to buy the stock until the price direction became clear. At point 6, he saw the second 3RV chart pattern. Then he noticed the symmetrical triangle, created by drawing trend lines along the price peaks and valleys. Looking to the left, the rise at 7 connects with the symmetrical triangle to form a diamond.

He reviewed the "For Best Performance" list and found that the stock was in a bull market (good) with a rising S&P 500 index (good); the breakout was in the middle of the yearly price range (bad); he expected a throwback (bad); the pattern was short and wide (the worst possible combination); but volume was rising (good) and it had a U shape (good). The commodity channel index (CCI) issued a buy the day before the breakout, but the relative strength index (RSI) remained neutral. In short, he faced a mixed technical picture.

Joshua used the trend-line break method to signal an entry. When price closed above a trend line connecting the two peaks in the pattern, he bought and received a fill at 9.20. He used the measure rule to predict a price target and came up with 11.66, the same height as the July top (far left). If he sold at that price, he would make 27%. Just below that was a solid line of resistance from March to May of 1998 (not shown), at a price of 10.80 and rising to about 12. He suspected that the resistance zone would cause a throwback.

He put a limit order to sell at 11.47, below the predicted target of 11.66 and below 11.50, where everyone else would put their orders. If triggered, he would make 25%.

Over the coming days, he watched the stock reach the resistance zone and then come tumbling down. It completed a throwback in mid-January. Fortunately, price rewarded his patience when it resumed climbing. It formed another symmetrical triangle and when it broke out upward, he removed the

limit order, reasoning that the measure rule from the triangle (13.16) was above his price, and he did not want to limit profits.

Price hit the new target but kept going up, pausing at D. Then it created a flag pattern that predicted a target of 16.19. Price hit that target 2 days after it pierced the top flag trend line. Price peaked at A and then made two successively lower lows, B and C. This was a three falling peaks pattern and it spelled trouble.

He checked his two favorite indicators, the RSI and CCI. The RSI was in overbought range since March, showing a horizontal movement even as prices climbed. CCI was even more dramatic. It peaked in March and then made successively lower peaks in April through May. This divergence, where prices move up and the indicator moves down, signaled a sale.

The day after price pierced the three falling peaks confirmation line (the lowest low in the pattern), he sold and received a fill at 13.77 for a gain of 50% in about 4 months. The stock continued lower and reached bottom in October at 7.38.

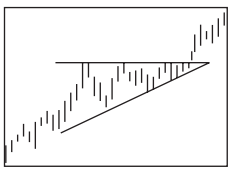
For Best Performance

The following list includes tips and observations for selecting 3RVs that perform better after the breakout. Consult the associated table for more information.

- Review the identification characteristics for correct selection—Table 46.1.
- Select three rising valleys in a bull market—Table 46.2.
- The pattern in a bull market has lower failure rates—Table 46.3.
- Pick patterns with breakouts near the yearly high—Table 46.4.
- Throwbacks and gaps hurt performance in a bull market—Table 46.4.
- Look for price to top out a month after the breakout—Table 46.5.
- Select tall patterns—Table 46.6.
- Choose patterns with a rising volume trend and U shape—Table 46.7.
- Patterns with light breakout volume outperform—Table 46.7.

47

Triangles, Ascending



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Triangle shape with horizontal top, upsloping bottom. Breakout is upward.	
Reversal or continuation	Short-term bullish reversal	
	Bull Market	**Bear Market**
Performance rank	17 out of 23	11 out of 19
Break-even failure rate	13%	12%
Average rise	35%	30%
Change after trend ends	–29%	–32%
Volume trend	Downward	Downward
Throwbacks	57%	54%
Percentage meeting price target	75%	63%
Surprising findings	Throwbacks hurt performance. Performs better with heavy breakout volume.	
See also	Head-and-Shoulders Tops; Three Rising Valleys; Triple Tops	

Downward Breakouts

Appearance	Same, but breakout is downward.
Reversal or continuation	Short-term bearish continuation

	Bull Market	Bear Market
Performance rank	9 out of 21	9 out of 21
Break-even failure rate	11%	3%
Average decline	19%	24%
Change after trend ends	52%	47%
Volume trend	Downward	Downward
Pullbacks	49%	45%
Percentage meeting price target	68%	66%
Surprising findings	Downward breakouts have the lowest failure rates for small price moves. Pullbacks hurt performance. Performance is best without a breakout day gap. Tall patterns perform better than short ones. Performs better with light breakout volume.	
See also	Same as for upward breakouts	

Have you ever heard someone say, "I just happened to be in the right place at the right time?" Perhaps you have even said it yourself. Investing is a lot like that—being in the right stock just before it takes off. That is one of the reasons the ascending triangle is one of my favorite formations: It can show you where the right place is at the right time. You can make a bundle of money if you trade it properly. But before we get to trading tactics, let us look more closely at ascending triangles.

Since upward breakouts invariably perform better than downward ones, the biggest surprise is that downward breakouts have smaller break-even failure rates than upward breakouts. The differences are small except for the bear market when the failure rate is 3%, one quarter the 12% rate of upward breakouts. Speaking of failure rates, beginning with the second edition of the *Encyclopedia*, I count premature breakouts as the actual breakout. In the first edition, I ignored them. Thus, the failure rates are now higher and the average rise or decline is smaller. The reason for the change is that traders do not ignore premature breakouts because each breakout looks like the real thing. The statistics now reflect that trading reality.

Tour

Figure 47.1 shows a good example of an ascending triangle. A horizontal trend line drawn across the minor highs and an up-sloping trend line connecting the minor lows form the characteristic triangular pattern. Volume diminishes as

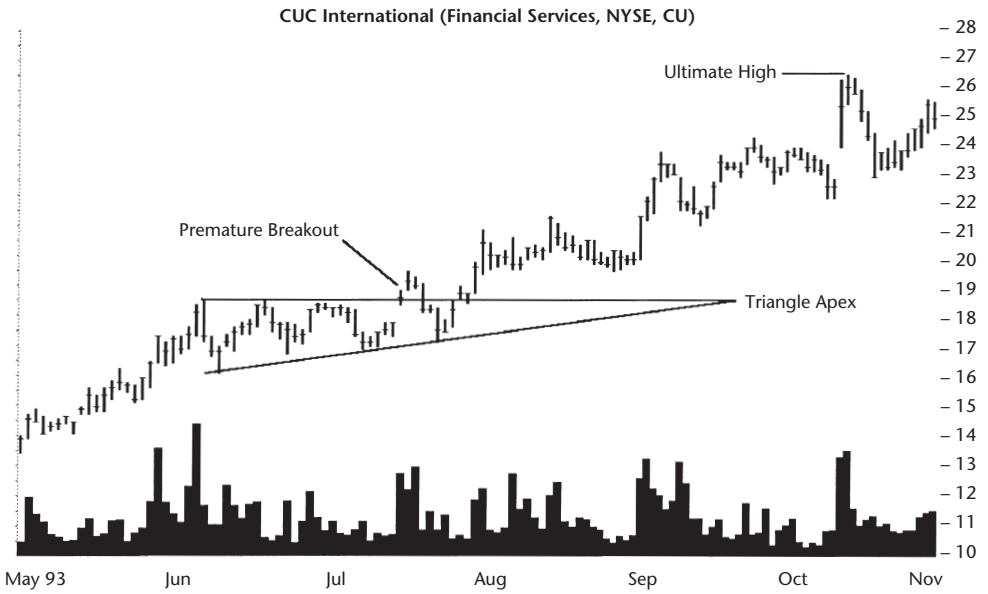


Figure 47.1 The horizontal top and up-sloping trend line on the bottom mark the boundaries of this bullish formation. The premature breakout on high volume is often indistinguishable from the real breakout. The volume trend is downward until the premature breakout.

prices bounce between resistance at the top and support at the bottom. A premature breakout gives a hint of the coming action; less than 2 weeks later, prices break out again and move higher.

Why do ascending triangles form? Imagine you are the manager of a large mutual fund. Over the years your fund has purchased a few hundred thousand shares of the company shown in Figure 47.1. After seeing the stock rise for almost a year, you are getting nervous about continuing to hold it. You believe the stock is trading well above its fair market value and you have spotted a more promising situation in another company.

You tell the trading department to dump all your shares as long as it receives at least 18.50. For 2 days, starting on June 4, 1993, the trading department sells shares. Since your fund has a large block of shares to get rid of, the price cannot climb much above 18.50 without the fund selling shares and forcing prices back down. The selling puts a ceiling on the stock. Word gets around that you are selling and other institutional investors jump on the bandwagon and sell too. Their aggressive selling satiates demand and the stock starts declining. It tumbles to a low of 16.25 on June 9, where buying demand halts the decline. Buyers, viewing the price of the stock as a steal, demand more shares. The buying pressure turns the decline around and prices start rising—quickly at first but more slowly as additional investors become willing to sell their shares. When the stock hits 18.50 again on June 16, your fund sells more shares, effectively halting the advance. The stock struggles at that level

for 3 days. Again, the selling pressure forces prices down and they cross to the other side of the now-forming ascending triangle. Prices rebound one last time, and hit the sell zone and stay there for about a week before being turned away by excess supply. A call from the trading department confirms that the stock has been completely sold.

Without an overhanging supply to halt the stock's rise, prices gap up on increasing demand and soar to 19.25. Your fund is out of the picture, but the forces of supply and demand are not finished with the company. Others still selling their shares force the stock price back down into the triangle proper. Prices race to the other side of the triangle, rebound off the lower trend line, then march back up out the top.

If I had to sum up the price action of an ascending triangle, I would say it forms because of a supply of shares available at a fixed price. Once the supply depletes, shares quickly break out of the formation and move higher. If demand continues to be strong, prices rise. Otherwise, the stock collapses back on itself and either regroups for another try or continues down.

Identification Guidelines

Finding an ascending triangle in a chart of daily price data is simple, perhaps too simple. I read a tutorial in a popular magazine in which nearly half the illustrations purporting to be triangles were incorrectly identified. If you have any doubt about the validity of a chart pattern, others may share those doubts. If others do not see the same shapes you do, chances are the pattern will not work as you expect. Under those circumstances, where there is some doubt about correct identification, do not trade the formation. Save your money for a trade where you are sure the formation is valid. I discuss identification problems later in this section. For now, Table 47.1 lists ascending triangle characteristics.

Triangle shape. The triangle pictured in Figure 47.1 is nearly a classic example of an ascending triangle. The horizontal top line of resistance repels prices and they rebound off a steadily rising support line below. The two narrowing lines, one horizontal and the other sloping up, outline a triangular shape. The ascending trend line predicts a rise in prices, hence the name *ascending triangle*.

Horizontal top line, up-sloping bottom trend line. The top horizontal trend line should have prices that approach and withdraw at least twice (in other words, two distinct minor highs). Similarly, two distinct minor lows support the up-sloping trend line. The two trend lines meet at the triangle apex, but prices usually break out of the formation well before then.

Crossing pattern. Price should cross the pattern several times, not walk along one of the trend lines. The pattern should look filled with price, not white space. Cutting off a price turn and calling it a triangle is a common selection error.

Volume. As the triangle forms, volume is heavy at first but tapers off until the day of the breakout. Often volume is abnormally low a few days before the

Table 47.1
Identification Characteristics

Characteristic	Discussion
Triangle shape	Two price trend lines, the top one horizontal and the bottom one sloping up, form a triangle pattern. The two lines join at the triangle apex.
Horizontal top line	Prices rise up to and fall away from a horizontal resistance line *at least twice* (two minor highs). Prices need not touch the trend line but should come reasonably close (say, within $0.15). The line need not be completely horizontal but usually is.
Up-sloping bottom trend line	Prices decline to and rise away from an up-sloping trend line. Prices need not touch the trend line but should come close (within $0.15). At least two trend line touches (minor lows) are required.
Crossing pattern	This is an important characteristic. Prices should cross the chart pattern several times; they should not leave a vast amount of white space in the center of the triangle.
Volume	Volume is heavier at the start of the formation than near the end. Volume is usually low just before the breakout.
Premature breakouts	Somewhat prone to premature breakouts, both up and down. Volume on a false breakout is also heavy, just as the genuine breakout.
Breakout	Volume is heavy (but need not be) and continues to be heavy for several days.The breakout can be up or down, usually following the existing price trend.
Price action after breakout	Once prices pierce the horizontal resistance line confirming a breakout, prices move away from the formation. Throwbacks to the formation top are common. If prices continue to climb rapidly, volume will probably remain high. For downward breakouts, volume is high at first and usually tapers off unless the price decline is rapid, in which case volume will probably remain high.

breakout, as if the formation is gathering strength for the final push. When the breakout comes, volume can rise substantially and usually does, but heavy volume on a breakout is not a prerequisite.

Premature breakouts and breakouts. How can you be sure the breakout is not a premature one? You cannot. A premature breakout is a close outside the boundaries of the two trend lines. After a few days, prices return to the confines of the triangle and eventually break out for good by soaring above the top trend line. Volume on premature breakouts is indistinguishable from normal breakouts and both occur at about the same distance to the triangle apex.

Price action after breakout. Once a triangle has a genuine breakout upward, what is the behavior like? Prices rapidly climb away from the triangle but occasionally throw back to the top of the formation. Volume is usually heavy, supporting the rise, and continues to be heavy as momentum gathers speed. Once price levels out, volume returns to normal. If price rises over several weeks, the volume pattern usually appears erratic and heavy when compared to earlier in the year.

What about support and resistance? If you consider the triangle as the momentary intersection of two trend lines, you can guess where support and resistance will be. It will be along the two trend lines. Figure 47.2 shows an example of this pattern on the weekly time scale. Notice the generally down-sloping volume trend from the formation start to the week before the breakout. Volume spikes upward on the breakout and then generally declines as prices round over and approach 1994. Prices start climbing again, essentially hugging the trend line started by the ascending triangle. The upward trend continues for several years following the triangle-initiated support line. Although the match between the sloping trend line and the slope of the later price action is not exact, the trend is clear. The triangle sports two minor high touches of the top trend line and three on the bottom, numbered in the figure. Trend-line touches and prices crossing the triangle are important selection criteria.

By now you may feel comfortable with correctly identifying an ascending triangle. However, there are some situations that may fool investors new to the formation. Figure 47.3 shows the first one. Cover up the right half of the figure and ask yourself if what you see on the left looks like an ascending triangle. The horizontal line, drawn to rest on top of the central peak, extends to the left and right until it intersects prices. Although the lower trend line has several instances where prices decline to and bounce off of the up-sloping line, the top trend line does not have such a situation.

Looking at the right side of the chart, does this still look like an ascending triangle? I can hear you asking me to lower the horizontal trend line until

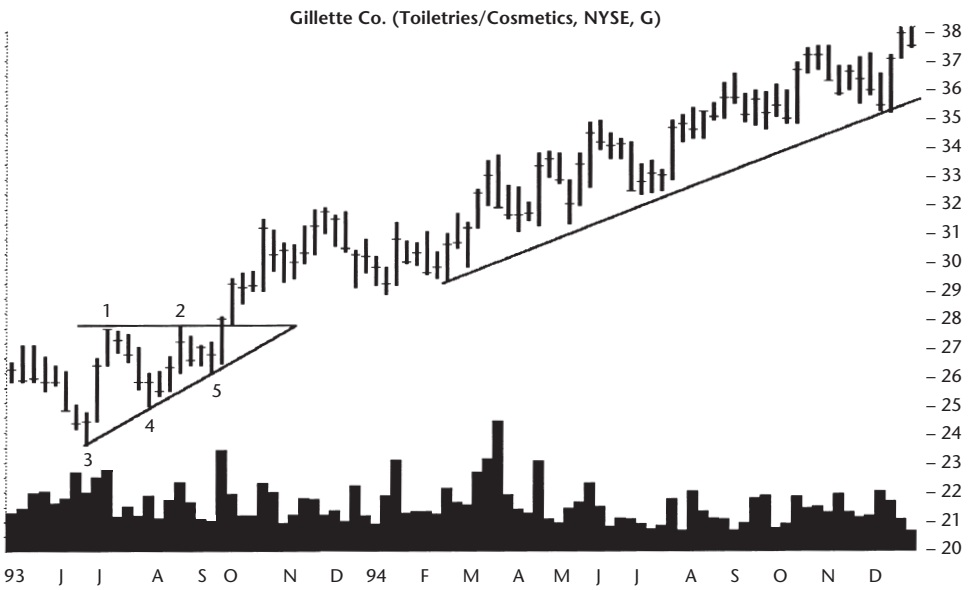


Figure 47.2 Ascending triangle on weekly time scale. The price rise generally follows the up-sloping support line of the triangle. The numbers count the minor high and low touches of the trend line.

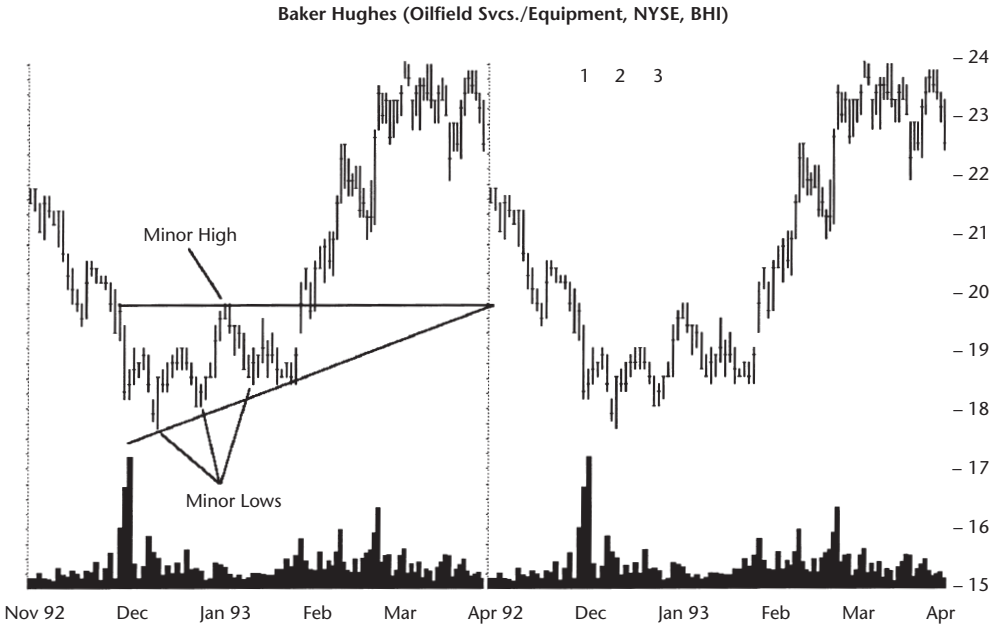


Figure 47.3 Two views of an incorrectly identified ascending triangle. What looks like an ascending triangle on the left clearly is not on the right. The three downward spikes in December, identified by the numbers near the top of the figure, mark a head-and-shoulders bottom with a horizontal neckline, not a triangle.

it touches the two minor highs in early to mid-December (below number 1 and midway between numbers 2 and 3). That is not a bad guess and it will work for a small triangle, but what you are really looking at is a head-and-shoulders bottom. The left shoulder has a large volume spike (under number 1). Located under number 2, the head shows a smaller volume spike. The right shoulder shows volume that recedes even further (number 3). A true ascending triangle has at least *two* minor highs forming the top trend line and at least *two* minor lows forming the bottom.

Figure 47.4 shows another example of a falsely identified ascending triangle. This chart has too much white space in the central portion of the triangle. A well-defined ascending triangle has prices that bounce from side to side as it nears the apex. Take a good look at the figure. It illustrates one of the most common identification mistakes. Novices will find a rounding bottom and draw a horizontal line across the top and another tangent to the bottom price action then yell, "Eureka! An ascending triangle!" Wrong.

Contrast Figure 47.4 with Figure 47.5. In Figure 47.5 notice the number of times price moves from one side of the triangle to the other. Even though prices do not rise very far before throwing back to the triangle apex and moving down, it is still a nicely formed ascending triangle. Also note the generally decreasing volume, especially near the breakout.

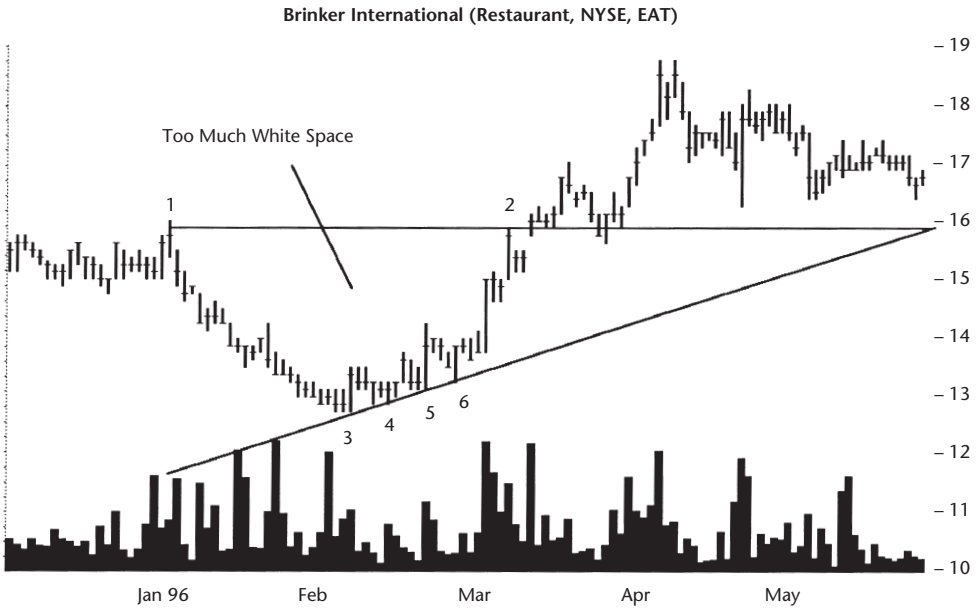


Figure 47.4 This pattern is not a valid ascending triangle. There are not enough crossings between the two trend lines to illustrate a valid triangle construction. The minor highs and lows are numbered.

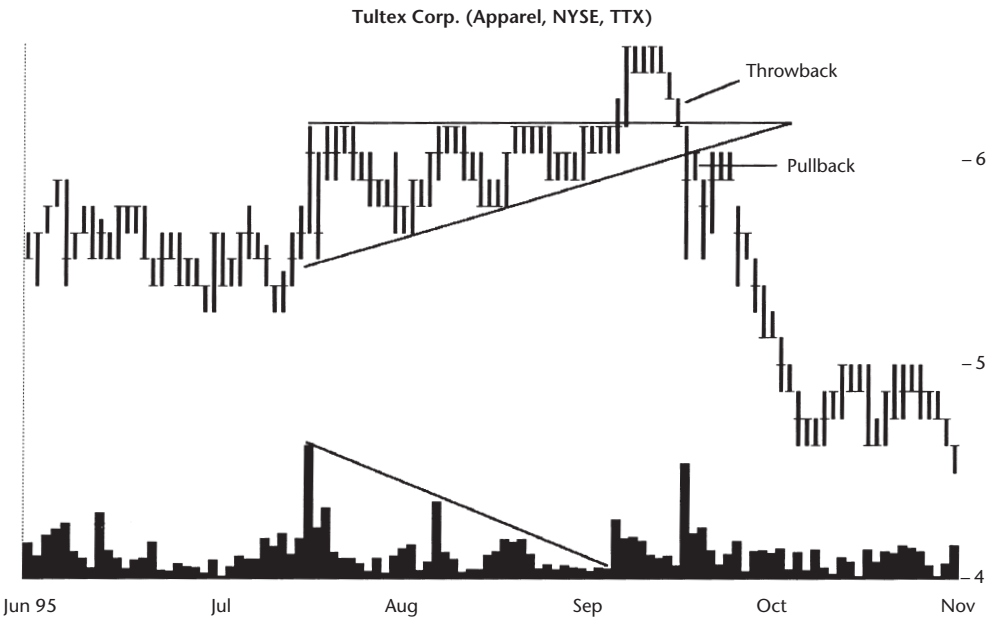


Figure 47.5 An excellent example of a correctly constructed ascending triangle. The number of minor highs and lows is good and there are plenty of crossings from the top trend line to the bottom. The volume trend is downward, too, until the upward breakout.

Focus on Failures

Figure 47.5 shows the first failure type: a 5% failure. Strictly speaking this is not a 5% failure (because price climbs by 6%), but it is typical of what one looks like. A 5% failure is when price breaks out and moves less than 5% higher before curling around and moving below the formation low. In this case, price leaves the formation at 6.13 and reaches a high of 6.50—a 6% move.

Most failures of this type have two causes. The first is overhead resistance, and it is easy to spot. Look for peaks or valleys sharing a common price or a solid block of horizontal price movement. Chart patterns, trend lines, and other technical patterns also set up resistance zones. Before investing in a pattern, always check for overhead resistance.

The second cause of failure is when the general market swings against the breakout direction. If the breakout is upward and the market turns down, that may be enough to kill a profitable trade. The same can happen with stocks in the same industry. If competitor's stocks are going down and yours is the lone holdout, chances are your stock will join the party and tank as well. Check the market and check stocks in the same industry before trading.

Statistics

Table 47.2 shows general statistics for ascending triangles.

Table 47.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	663	103	237	89
Reversal (R), continuation (C)	372 R, 291 C	58 R, 45 C	106 R, 131 C	42 R, 47 C
R/C performance	36% R, 34% C	37% R, 23% C	–18% R, –19% C	–24% R, –25% C
Average rise or decline	35%	30%	–19%	–24%
Rises or declines over 45%	200 or 30%	25 or 24%	13 or 5%	8 or 9%
Change after trend ends	–29%	–32%	52%	47%
Busted pattern performance	41%[a]	20%[a]	–22%	–28%[a]
Standard & Poor's 500 change	13%	–3%	3%	–11%
Days to ultimate high or low	185	97	64	39

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Number of formations. I looked at 1,092 triangles using 500 stocks from mid-1991 to mid-1996, and 500 stocks mostly from 2000 to 2003 (the bear market) but included additional patterns between those two periods.

Reversal or continuation. Upward breakouts act as reversals of the downward price trend and downward breakouts act as continuations. The numbers are close enough that one behavior does not dominate the other (reversals make up 53% of the triangle population and continuations 47%). Triangles with upward breakouts acting as trend reversals outperform, sometimes significantly, and in downward breakouts, continuations outperform but by a slight degree.

Average rise or decline. The numbers in this row are, well, average when compared to other chart pattern types. The best and worst performance comes during a bull market. Upward breakouts climb 35% (the best performance) and downward ones drop just 19% (the worst performance). Remember that I include premature breakouts as regular breakouts, so that partly accounts for the lower performance numbers. Note that the best performance comes when prices follow the market trend: upward breakouts in bull markets and downward breakouts in bear markets.

Rises or declines over 45%. Upward breakouts perform well, as over a quarter rise more than 45%. Downward breakouts suffer using this measure, so the poor showing is expected.

Change after trend ends. Once price reaches the ultimate high or low, it drops about 30% (after the ultimate high) and climbs about 50% (after the ultimate low). The numbers show how much you can make if you successfully trade a trend change.

Busted pattern performance. Busted patterns are easy to spot as prices move less than 5% from the breakout before returning to the triangle and shooting out the other side. When that happens, trade in the direction of the new trend.

Standard & Poor's 500 change. Compare the market numbers with the average rise or decline. When the market is bullish, that helps upward breakouts and hurts downward ones. Bearish market numbers have the same impact. The numbers suggest you trade with the market trend: upward breakouts in a bull market and downward breakouts in a bear market. Countertrend trades often lead to disappointing results.

Days to ultimate high or low. Upward breakouts take longer to reach the ultimate high than downward breakouts take to reach the ultimate low. The implication of this finding is that the bear market is steeper than is the rise in a bull market. For example, the 24% decline in a bear market takes 39 days. If the decline measured 35% (the same as the rise in a bull market), it should take 57 days not 185 as it did in a bull market. Thus, the decline in a bear market is steeper but shorter.

Table 47.3 shows failure rates for ascending triangles. Upward breakouts have higher failure rates than downward breakouts, with the best showing com-

Table 47.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	83 or 13%	12 or 12%	25 or 11%	3 or 3%
10	159 or 24%	30 or 29%	60 or 25%	9 or 10%
15	212 or 32%	37 or 36%	99 or 42%	26 or 29%
20	278 or 42%	50 or 49%	133 or 56%	38 or 43%
25	329 or 50%	54 or 52%	169 or 71%	46 or 52%
30	368 or 56%	59 or 57%	189 or 80%	63 or 71%
35	411 or 62%	65 or 63%	209 or 88%	70 or 79%
50	484 or 73%	79 or 77%	229 or 97%	85 or 96%
75	542 or 82%	90 or 87%	237 or 100%	89 or 100%
Over 75	663 or 100%	103 or 100%	237 or 100%	89 or 100%

ing in a bear market. I consider that finding unusual, but the sample size is also small—89. Still, it is one quarter the 12% rate of upward breakouts (103 samples).

Best explained by examples, you read the table as follows: About a third (32%) of ascending triangles with upward breakouts in a bull market fail to climb at least 15% after the breakout. Half (50%) fail to rise 25%. For downward breakouts, the bear market does best with just 3% failing to decline at least 5% after the breakout. Over half (52%) fail to drop more than 25%.

Notice how the failure rates climb for small changes in the maximum price rise or decline. The rates double or triple and then move up again, but not so dramatically, for maximum price moves from 5% to 10% and on to 15%. Such high increases are typical for all chart pattern types.

Compare the failure rates of bull market, upward breakouts with its complement, bear market, downward breakouts. Above 15%, the bull market takes over and shows a lower failure rate.

What do the numbers mean? Although most of the failure rates start high, they do not increase as fast as other chart patterns (which typically triple and then double for moves up to 15%). If you expect a large price move, hope that the pattern shows an upward breakout in a bull market for the best performance. For small moves, triangles with downward breakouts in a bear market do best. Avoid trading the countertrend triangles (bear market, upward breakout or bull market, downward breakout) as they underperform.

Table 47.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. Pay little attention to this statistic. The delay before the breakout is due to the way my computer program draws the triangles.

Table 47.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	3 days	4 days	6 days	5 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L21%, C28%, H51%	L23%, C31%, H46%	L26%, C35%, H39%	L29%, C30%, H40%
Percentage rise/decline for each 12-month lookback period	L34%, C33%, H38%	L36%[a], C26%, H31%	L19%, C19%, H17%	L26%[a], C25%[a], H24%
Throwbacks/pullbacks	57%	54%	49%	45%
Average time to throwback/ pullback ends	11 days	10 days	11 days	9 days
Average rise/decline for patterns with throwback/pullback	31%	22%	–17%	–20%
Average rise/decline for patterns without throwback/pullback	41%	41%	–20%	–27%
Performance with breakout gap	35%	47%[a]	–13%[a]	–19%[a]
Performance without breakout gap	35%	28%	–19%	–24%
Average gap size	$0.25	$0.23	$0.22	$0.51
Breakout distance to apex	61%	63%	62%	57%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Yearly position. Across the table, ascending triangles appear most often within a third of the yearly high.

Yearly position, performance. The best performing triangles have breakouts near the yearly high or low (upward breakouts). Avoid those in the middle of the yearly trading range. No clear trend accompanies triangles with downward breakouts.

Throwbacks and pullbacks. Throwbacks and pullbacks occur about half the time and take between 9 and 11 days for the stock to return to the breakout price. In all cases, when a throwback or pullback happens, performance suffers. For example, triangles in a bear market with throwbacks show an average rise of 22%. Without a throwback, the rise averages 41%.

Gaps. Triangles have few gaps, so many of the results are questionable. Triangles with downward breakouts do best without a gap appearing on the breakout day.

Apex distance. I compared the time to the breakout with the length of the triangle from the start to the apex. Most of the time, ascending triangles will show breakouts about 62% of the way to the apex.

Table 47.5 shows a frequency distribution of time to the ultimate high or low. Many of the triangles with poor performance flame out early, usually in the first week or two. For example, 38% of the triangles with downward breakouts in a bear market will reach the ultimate low in less than 2 weeks. In 3 weeks, 53% will stop declining.

Some triangles take longer to reach peak performance, notably those with upward breakouts in a bull market. Over half, 53%, are still climbing to the ultimate high after 70 days. Upward breakouts take longer to reach the ultimate high than downward breakouts take to reach the ultimate low. As I mentioned before, downward breakouts have a steeper slope than upward breakouts. Thus, they tend to bottom quicker.

Table 47.6 shows statistics related to size.

Height. Tall patterns perform equal to or better than short ones across all market conditions and breakout directions. For example, tall triangles in a bull market with upward breakouts show rises of 43%. Short ones rise just 30%, on average.

Width. Width is not as robust a predictor of performance as height. Sometimes wide patterns perform better and sometimes narrow ones do. Countertrend triangles (bear market, up breakout and bull market, down breakout) do better when they are narrow. Wide ones do best when the breakout direction matches the market trend. In all cases, I used the median length as the separator between narrow and wide.

Average formation length. The average triangle is about 2 months long, measured from the start of the pattern to its end, which is a few days before the

Table 47.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	24%	5%	6%	8%	6%	1%	4%	1%	2%	0%	44%
Bull market, up breakout	20%	7%	3%	3%	3%	1%	2%	2%	3%	2%	53%
Bear market, down breakout	21%	17%	15%	4%	8%	6%	4%	3%	2%	1%	18%
Bull market, down breakout	18%	9%	9%	6%	5%	5%	8%	4%	3%	5%	27%

Table 47.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	43%	30%	–22%	–26%
Short pattern performance	30%	30%	–16%	–23%
Median height as a percentage of breakout price	10.13%	13.65%	12.02%	16.32%
Narrow pattern performance	33%	36%	–20%	–24%
Wide pattern performance	38%	26%	–18%	–25%
Median length	45 days	53 days	51 days	48 days
Average formation length	54 days	65 days	65 days	58 days
Short and narrow performance	31%	34%	–18%	–24%
Short and wide performance	28%	24%[a]	–13%	–21%[a]
Tall and wide performance	46%	27%	–20%	–27%
Tall and narrow performance	41%	41%[a]	–30%	–24%[a]

Note: Minus sign means decline.

[a]Fewer than 30 samples.

breakout. The numbers do not measure the time from the pattern's start to the apex.

Height and width combinations. Which combinations of height and width perform best? Anything tall outperforms anything short, usually. Triangles with breakouts in the direction of the prevailing market trend (bull market, upward breakout and bear market, downward breakout) have the best performance when they are both tall and wide. Countertrend triangles do best when they are both tall and narrow.

Table 47.7 shows volume-related statistics.

Volume trend. Triangles showing a rising volume trend perform best when the breakout is in the direction of the general market. Countertrend triangles do better when they have receding volume.

Volume shapes. It surprises me that triangles with random volume shapes outperform those when the breakout follows the general market trend. Countertrend triangles do best with U-shaped volume and worst with random-shaped volume.

Breakout volume. Heavy breakout volume helps push prices in triangles with upward breakouts to better performance. Triangles with downward breakouts perform better with light breakout volume.

Table 47.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	39%	28%[a]	–16%	–26%[a]
Falling volume trend performance	34%	31%	–20%	–24%
U-shaped volume pattern performance	35%	36%	–20%	–25%[a]
Dome-shaped volume pattern performance	35%	30%	–19%	–23%
Neither U-shaped nor dome-shaped volume pattern performance	39%	19%[a]	–16%[a]	–27%[a]
Heavy breakout volume performance	37%	33%	–18%	–24%
Light breakout volume performance	32%	22%[a]	–20%	–26%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Trading Tactics

Now that you can identify ascending triangles and know their behavior, how do you trade them? Before I give an example of a trade, I discuss trading tactics and the measure rule (see Table 47.8).

Measure rule. The shape of the ascending triangle suggests prices will rise, but how far? If you compute the height of the formation and add the result to the price of the horizontal trend line, the result is the minimum predicted price. This is called the measure rule. For downward breakouts, subtract the triangle height from the breakout price to get the target.

An example makes the calculation clear for upward breakouts. Consider the stock shown in Figure 47.6. Calculate the height of the formation by subtracting the low (14.38 at the first minor low) from the high (17.63 denoted by the horizontal trend line) at the formation start. The difference is 3.25. Add the result to the highest high—the value of the horizontal trend line—and you get a target price of 20.88. Prices reach the target in mid-July 1992, when they climb to a high of 21.63, about 6 weeks after the upward breakout.

A more visual approach is to draw a line from the start of the formation (the top left corner) parallel to the up-sloping trend line. The value of the line the day price breaks out of the formation becomes the target price. The figure shows the new line. Be careful when determining where the formation begins

Table 47.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute the height of the formation at the start of the triangle. Add the result to the price of the horizontal trend line (upward breakout) or subtract it from the break price (downward breakout). The result is the minimum price target.
Wait for confirmation	Buy the stock when price closes beyond the trend line.
Sell on measure rule	For short-term traders, sell when price nears the target (see measure rule). For intermediate- and long-term traders, hold the stock until fundamentals or market conditions change.
Sell on downward breakout	If you own the stock and it breaks out downward, sell. If you do not own it, sell it short. Should the stock pull back, that is another opportunity to sell, sell short, or add to your short position.
Short sales	If you short the stock and an ascending triangle appears, you have a 43% chance that it will break out downward. Cover the short immediately if it breaks out upward.

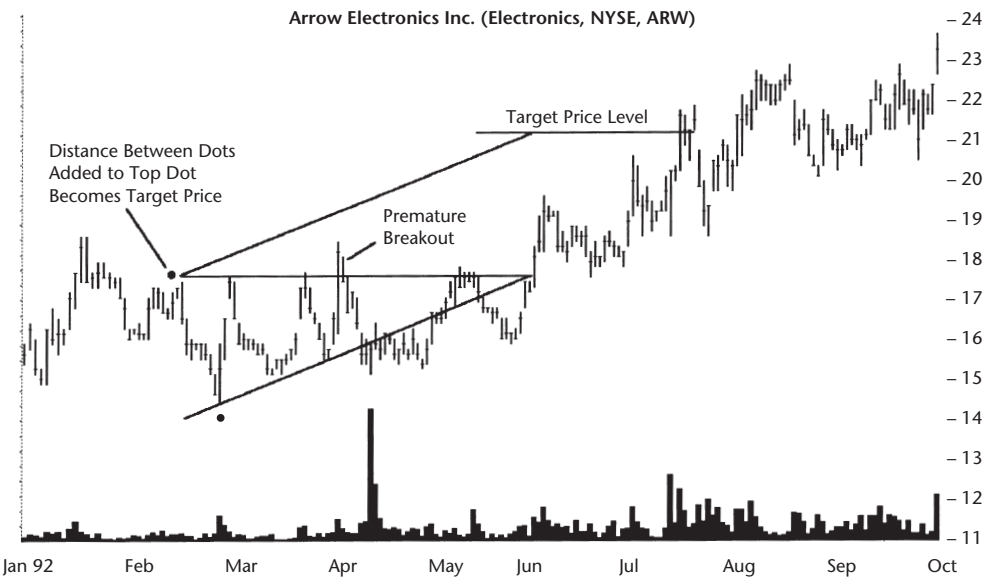


Figure 47.6 There are two ways to predict the price move of an ascending triangle. Compute the formation height by subtracting the low from the high at the start of the formation (denoted by the two circles). Add the result to the price marked by the top trend line. The combination is the price to which the stock will climb, at a minimum. Alternatively, draw a line parallel to the up-sloping trend line beginning with the left top corner of the formation. At the point where prices break out of the formation, the price level of the line becomes the target price.

since tagging the beginning of the formation too soon will cause an abnormally high price target.

Wait for confirmation. Thirty percent of triangles breakout downward, but the actual breakout direction is unknown ahead of time. If price closes above the top trend line or below the up-sloping trend line, that behavior signals a breakout. For the lowest risk of a failed trade, wait for confirmation—price closes outside one of the trend lines—before trading the stock.

Sell on measure rule. Once price breaks out, use the measure rule to estimate the move. Since the measure rule is not perfect (see the Results Snapshot, "Percentage meeting price target" for the numbers), be ready to take profits once price nears the target. Use past resistance zones to fine-tune the prediction.

Sell on downward breakouts, short sales. If prices break out of the triangle downward, then sell your holdings immediately. This is also a time to go short. If a pullback occurs, wait for prices to resume their downward direction and then add to your short position. Close out the trade if the fundamentals improve or if prices pause at a support zone.

Sample Trade

Dan is an investor with a few years of experience. He is new to technical analysis and discovered ascending triangles by accident. After doing some research to familiarize himself with the formation, he found that if he delayed buying a stock until after a breakout, he would increase his chances of success. However, he would also give up part of his gains because the fastest portion of the rise occurs at the start. That was a trade-off he was willing to make.

Dan took an interest in the company shown in Figure 47.7 when he noticed an ascending triangle forming in the stock. He believed that the breakout was nearly at hand when volume collapsed to 23,400 shares on August 19. Two days later, on higher volume, prices crossed the triangle and peaked out the top. For the next few days, prices balanced themselves on the top horizontal trend line and waited for demand to send them higher. The decisive breakout occurred on August 26, even though volume was tepid. Dan grabbed his calculator and computed the breakout distance to the apex and discovered that the breakout occurred at the 70% mark. This percentage signaled a potentially strong breakout.

However, volume told a different story. Although volume had been steadily receding throughout the formation as one would expect, there was not enthusiastic volume on the breakout. With this stealthy signal, Dan decided to wait before buying the stock.

Believing that a profitable opportunity was at hand, he computed the target price to see if it afforded a profitable move. The predicted price of 22.50 was

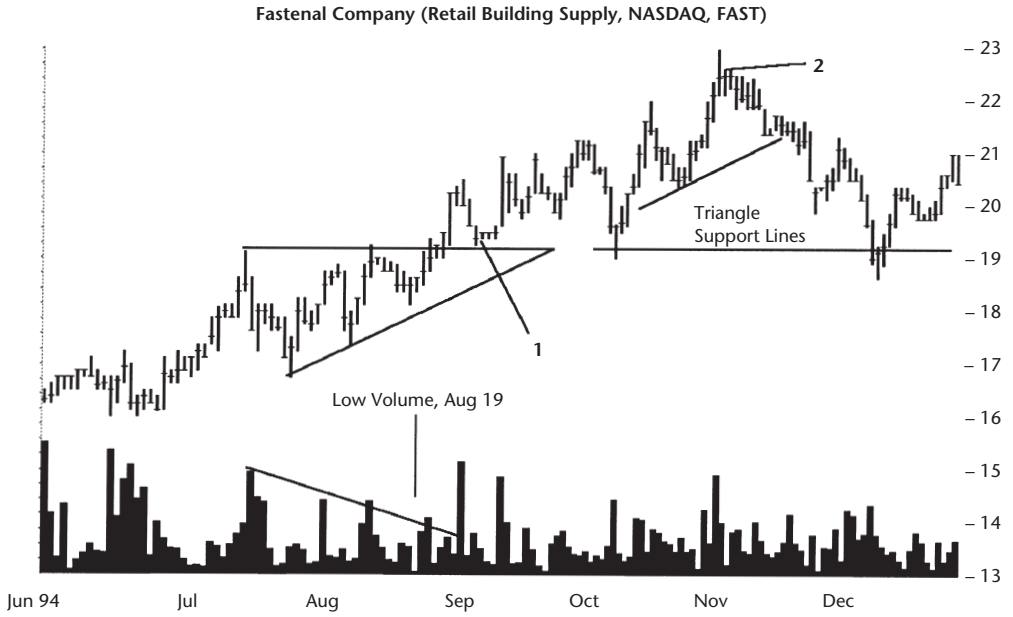


Figure 47.7 Trading an ascending triangle. As described in the Sample Trade, Dan bought 500 shares of the stock at point 1 after the stock threw back to the formation. He sold it at point 2, the day after the stock hit the price target of 22.50. Note the down-sloping volume trend during creation of the formation and the two support lines parallel to the two triangle borders.

15% above the 19.25 launch price. To Dan, the small move was not terribly exciting, but it was much better than the interest rate the banks were paying.

Two days after the breakout, the stock started declining and returned to the top of the formation. That is when Dan pulled the trigger and bought 500 shares at the high for the day, 19.50 (point 1 on Figure 47.7). Immediately, he placed a stop-loss order to sell the stock should it decline 0.15 below the lowest low of the formation. That would limit his loss to a steep 15%, but it was also slightly below the nearest support level (the bottom of which was at 16.75). He reasoned that there was a decent chance that if the stock declined, growing demand would repulse prices and not trigger his stop.

Then he waited and watched the stock. It peaked at 21.25 on September 26 before leveling off and heading back down. Since the stock was not near the price target of 22.50, Dan decided to hold on. The stock continued sinking until it found support at the horizontal triangle trend line at 19 on October 5. At that point, the stock started moving up again. On Halloween, the stock reached his price target by hitting a daily high of 23. He decided to sell the stock the next day and received a fill at 22.50.

Dan had a net gain of $1,450 or almost $3 a share. That is a 15% gain in 2 months. He also decided that he was lucky as he sold near the top. When the stock returned to the support level in early October, it could have continued

down. He decided that once a stock rises by 10%, he should raise his sell stop to breakeven, even though, in this case, it would have cashed him out prematurely.

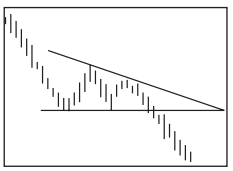
For Best Performance

The following list includes tips and observations to help select ascending triangles that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 47.1.
- Trade with the market trend: long in a bull market and short in a bear market—Table 47.2.
- Trade busted patterns—Table 47.2.
- The bear market decline is steeper and shorter than the rise in a bull market—Table 47.2.
- Triangles in a bear market with downward breakouts have the lowest failure rates for small price moves. Triangles with upward breakouts in a bull market have fewer failures for moves above 15%—Table 47.3.
- Avoid triangles with upward breakouts near the middle of the yearly trading range—Table 47.4.
- Throwback and pullbacks hurt performance, so avoid overhead resistance (upward breakouts) or nearby support (downward breakouts)—Table 47.4.
- Triangles with downward breakouts perform better without breakout day gaps—Table 47.4.
- Expect the breakout about 62% of the way to the apex—Table 47.4.
- Half the triangles with downward breakouts in a bear market reach the ultimate low in 3 weeks—Table 47.5.
- Select tall patterns—Table 47.6.
- Trade triangles with upward breakouts on heavy volume; downward breakouts, with low volume—Table 47.7.

48

Triangles, Descending



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Triangle shape with horizontal bottom and down-sloping top. Breakout is upward.	
Reversal or continuation	Short-term bullish continuation	
	Bull Market	**Bear Market**
Performance rank	5 out of 23	7 out of 19
Break-even failure rate	7%	9%
Average rise	47%	27%
Change after trend ends	–30%	–34%
Volume trend	Downward	Downward
Throwbacks	37%	52%
Percentage meeting price target	84%	61%
Surprising findings	Throwbacks hurt performance. Patterns both tall and narrow give the best performance. Heavy breakout volume helps push prices higher.	
See also	Head-and-Shoulders Tops; Three Falling Peaks	

Downward Breakouts

Appearance	Same, but breakout is downward.
Reversal or continuation	Short-term bearish reversal

	Bull Market	Bear Market
Performance rank	10 out of 21	12 out of 21
Break-even failure rate	16%	11%
Average decline	16%	25%
Change after trend ends	60%	50%
Volume trend	Downward	Downward
Pullbacks	54%	59%
Percentage meeting price target	54%	50%
Surprising findings	Pullbacks hurt performance. Tall or wide patterns perform better than short or narrow ones. Heavy breakout volume helps push prices higher.	
See also	Same as for upward breakouts	

The Results Snapshot shows the important statistical results for descending triangles. Your best bet is to trade triangles with upward breakouts in a bull market. They have the lowest break-even failure rate and highest average rise. In addition, 84% meet or exceed their price targets.

One important change I made to the statistics from the first edition of this *Encyclopedia* is to consider a premature breakout as a genuine one. As soon as price closes outside of the trend lines, I now consider that a breakout. This altered criterion tends to increase the failure rate and decrease the average price move after the breakout. Keep that in mind when we get to the statistics section of this chapter.

Surprises are comparatively few and they are the same as with many other chart patterns. Throwbacks and pullbacks hurt performance and height or width influences postbreakout performance as does breakout volume.

Tour

Figure 48.1 shows a descending triangle that is typical in many respects. Prices rise to meet a down-sloping trend line on the top of the pattern and fall back. Then, they rebound off a horizontal trend line along the base of the formation. The volume pattern is unusual for a descending triangle. Normally, volume recedes as the breakout approaches, but this one appears to have a U-shaped trend—higher at the beginning and end, and weaker in the center. The breakout is downward and occurs on low volume. A bearish breakout can have high or low volume but volume is usually heavy. After the breakout, prices pull back to the triangle boundary before continuing down.

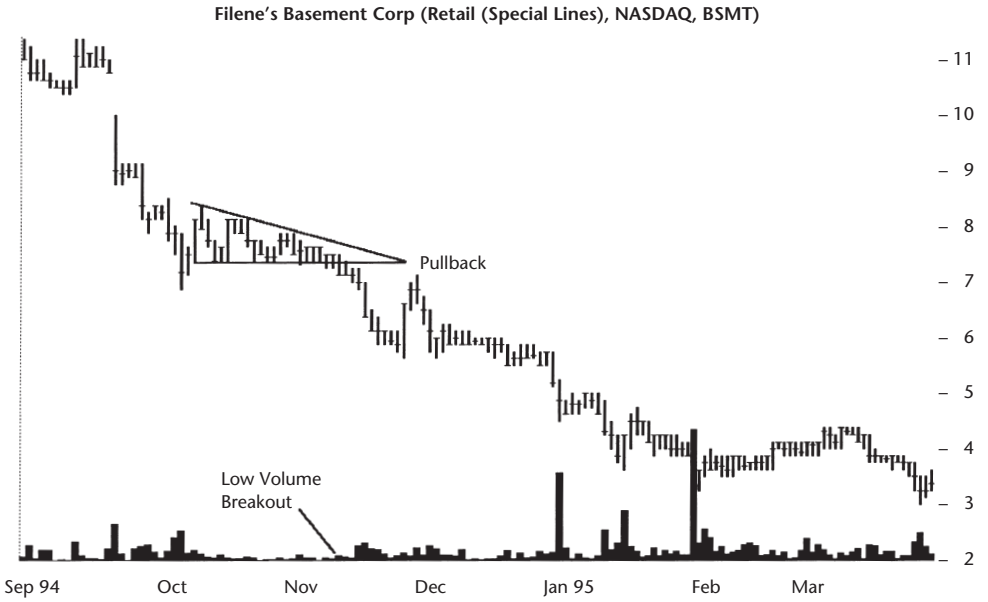


Figure 48.1 A nicely formed descending triangle with unusual volume pattern. Typically, volume trends downward and is quite low just before the breakout. Also shown is a pullback, repulsed by the horizontal resistance level.

Why do descending triangles form? The descending triangle shown in Figure 48.1 begins forming in October 1994 as part of a consolidation in a downward trend. Imagine you believe the fair value of this stock is 7.38 but is overvalued at prices much above that. You tell your broker to buy the stock should it fall to 7.38. After reaching a minor high at 8.38 on October 11, the stock begins declining for a few days. It descends and reaches the buy price 2 days later. Your broker buys the stock.

You are not alone. Other investors, believing the stock is retesting the low that occurred a week earlier, also buy the stock. Together, the buying puts a momentary floor on the stock. For the next 2 days, the stock returns to the 7.38 level before buying demand pushes the price higher. This time the stock does not climb as high as the prior minor high; it only reaches a value of 8.13 before turning down. Again, when the stock reaches a low of 7.38, buying demand increases enough to halt the decline at that level and to send the stock moving back up. During the next 2 weeks or so, you and other investors buy the stock. Enthusiasm for the stock quickly wanes and a series of lower highs outline a down-sloping trend. The floor, at 7.38, becomes the horizontal support level.

Eventually, investors buy enough of the stock and have either run out of money to buy more or decide they already own enough. The stock slips below the support line on November 9, and closes at the low for the day at 7.13. The stock hovers near that price for a few more days before continuing down in earnest on higher volume.

Quick-footed investors, realizing that the floor is no longer holding firm, sell the stock. The price begins declining rapidly now but soon levels off. For a few days, selling pressure meets buying demand and the decline halts, turns around, and begins moving up. It nears the base of the triangle and the smart money quickly disposes of any remaining shares in their portfolios. The pullback completes and the stock rounds over and starts heading down again. In 3 months' time the stock reaches the ultimate low of just under 3 before leveling out. That is a decline of 60%.

Identification Guidelines

Descending triangles have distinctive chart patterns making them easy to identify. Consider the triangles shown in Figure 48.2. A descending triangle appears during March and April 1993 and marks the end of a long rise started in late 1992. Like a ball bouncing along the floor, each bounce from the support line is less high than the previous bounce, giving the formation a downsloping appearance along the top. The support region at 29.50 is flat. These two ingredients, a down sloping trend line on the top and a horizontal support line on the bottom, are the two main characteristics of descending triangles. A receding volume pattern throughout the formation completes the picture.

The July formation is also a descending triangle although not as well formed. The volume pattern rises through the first half of the formation before

Figure 48.2 The March triangle forms after a long climb beginning in late 1992. The nicely formed chart pattern has a receding volume trend especially in the latter half of the formation. The July formation is a failure since it does not immediately descend as expected. Over a third of descending triangles break out upward.

moving downward toward the triangle apex. I am sure that if you owned stock in this company and sold during either of the descending triangles, you would be pleased. Although the second formation is a failure because it rises above the triangle top, prices do start down within the month. Sometimes failed formations prematurely alert you to a trend change, as the July example shows.

Table 48.1 outlines the identification characteristics for descending triangles.

Triangle shape. The triangular-shaped appearance makes the descending triangle pattern easy to identify. Look for two trend lines: the bottom one horizontal, or nearly so, and the top one sloping down. The two trend lines should eventually join at the triangle apex, but price usually breaks out before reaching it.

Horizontal support line. Price rebounds off the bottom of the formation creating a horizontal trend line. This imaginary line acts as support for the stock. Once price closes below the line, it resists any upward move. Look for at least two touches of the horizontal trend line. The touches should be distinct minor lows, not part of the same consolidation region.

Down-sloping top trend line. Prices oscillate up and down, with each wave getting smaller, and the tops of these waves following a down-sloping trend line. The trend line acts as a layer of resistance. Look for at least two touches of the top trend line, both from minor highs, not as part of the same congestion region.

Volume. Volume typically recedes over the course of triangle development. As price approaches the breakout, it usually becomes quite low, as if gathering strength before a wrestling match, and then explodes upward during

Table 48.1
Identification Characteristics

Characteristic	Discussion
Triangle shape	A triangular-shaped pattern bounded by two trend lines, the bottom one horizontal and the top one sloping down, that intersect at the triangle apex.
Horizontal support line	A horizontal (or nearly so) base acts to support prices. Prices should touch the base at least twice (at least two minor lows that either touch or come close to the trend line).
Down-sloping top trend line	A down-sloping price trend that eventually intersects the horizontal base line at the apex. Prices should rise up and touch (or come close to) the sloping trend line at least twice, forming two distinct minor highs.
Volume	Volume recedes and tends to drop off just before the breakout.
Breakouts	Usually occur on very high volume that diminishes over time. However, prices can also break out on low volume.
Price action after breakout	Prices usually move down quickly, reaching the ultimate low in a straight-line fashion. Pullbacks occur about half of the time.

the breakout. Volume need not be high during the breakout or low preceding the breakout, but that is the typical behavior. Do not exclude a descending triangle just because volume looks unusual.

Breakouts. Price can break out in any direction, including none at all when price just meanders out the triangle apex. If you were to trade descending triangles often enough, you would find that two out of three break out downward. However, the breakout direction follows the prior price trend half the time, meaning sometimes it acts as a reversal and sometimes not.

Price action after breakout. About half the time, price returns to the breakout price through either a throwback (upward breakout) or pullback (downward breakout), taking less than 2 weeks to complete the trip. After that, anything can happen. Usually, however, price returns to moving in the original breakout direction but sometimes not—just to frustrate the largest number of traders.

Support and resistance appear along the two trend lines. Throwbacks to the top of the formation usually stop at the sloping trend line, whereas pullbacks to the bottom halt at the horizontal trend line. After a breakout, prices often follow the sloping trend line down. During the recovery process after a descending triangle, prices rise to meet the level of the horizontal trend line and then pause. Sometimes it takes several tries before prices push up through the horizontal resistance line.

Triangles, as a group, are easy to spot. However, there are some situations that dictate a careful approach. Figure 48.3 shows an example of what looks like

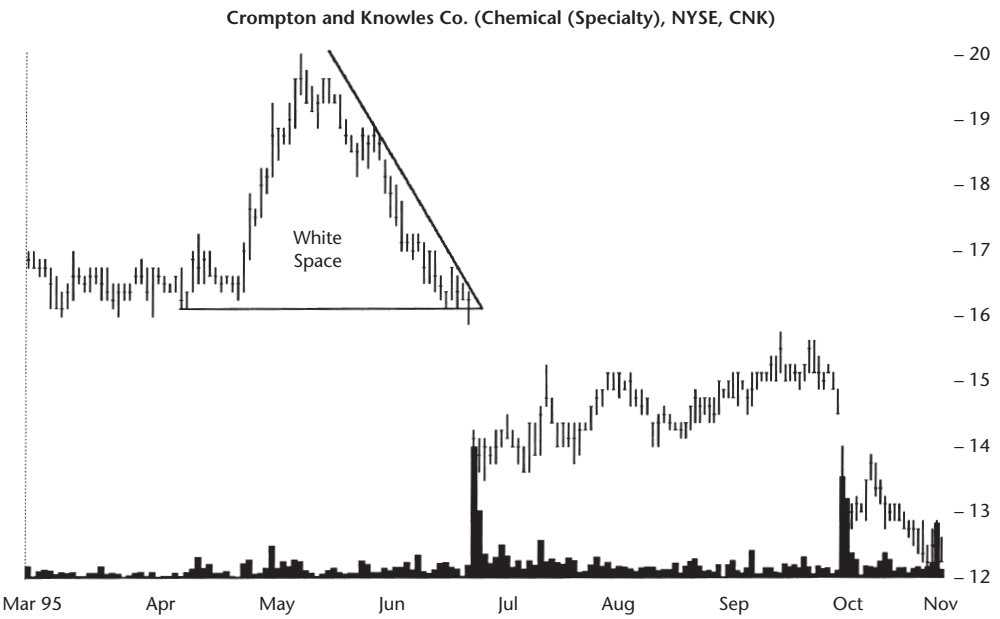


Figure 48.3 This is not a descending triangle. There is only one minor high, leaving too much white space in the center of the formation. Prices should cross from side to side several times forming at least two minor highs and lows.

a descending triangle, but is not. The volume trend does not conform to the usual receding pattern. In Figure 48.3 volume rises along with prices at the start of the triangle and then tapers off at the top when prices round over. However, volume climbs as prices descend and then ignites the day after the breakout.

Volume for many formations is not a crucial factor, and you should not attach too much significance to it. However, a volume pattern that is not characteristic raises a warning flag. Coupled with other factors, it might cause you to bypass the stock and look elsewhere for a more promising situation.

The price picture is even worse. Only one minor high composes the entire triangle. Well-formed descending triangles have prices that cross from side to side several times. There is no massive amount of white space in the center of the triangle. Contrast Figure 48.3 with Figure 48.1.

Focus on Failures

Figure 48.4 shows an example of what traders hate. The breakout is downward, but it lasts for just 2 days before price pulls back to the triangle. Then, as if jumping off a springboard, price takes to the air and climbs. When it rises above the top of the triangle, the descending triangle chart pattern becomes a

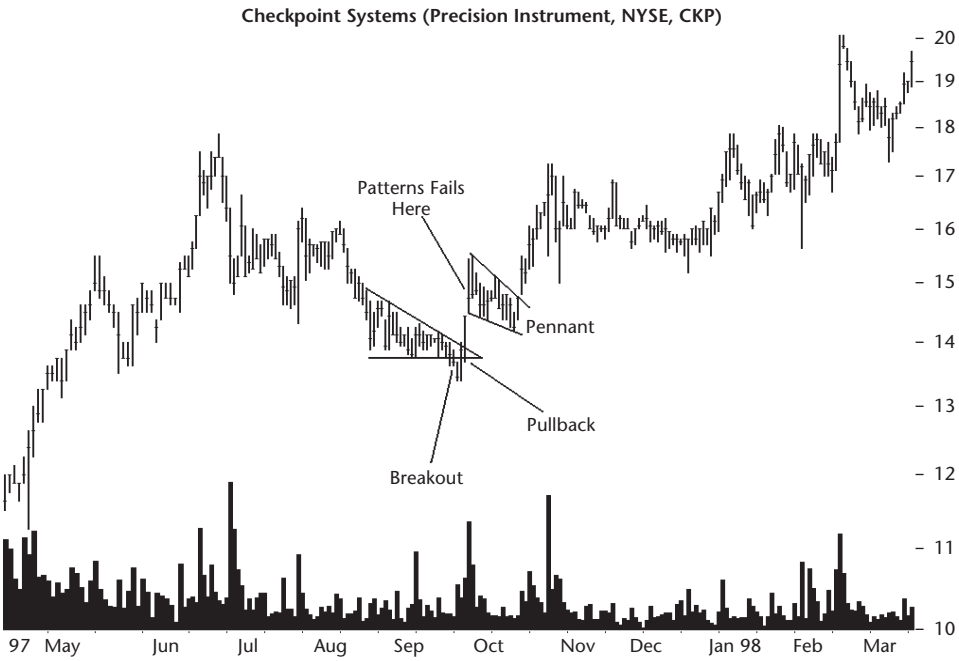


Figure 48.4 This is an example of a busted pattern. A brief downward breakout dooms this descending triangle. Underlying support and a bull market helped turn the price tide from down to up.

failure (because some traders will put a stop above the triangle top to prevent a catastrophic loss). The climb does not end there as price forms into a pennant with an upward breakout. That pennant, being a half-staff pattern, suggests a climb that equals the one leading to it. In this example, the rise is more than the preceding one.

What went wrong with this triangle? The price trend leads downward into the pattern and many traders would expect a downward breakout, but the triangle forms in the midst of a bull market. In a rising general market (that is, the S&P 500 index is moving up), a downward breakout is always a red flag. In fact, the S&P was on a straight uphill run leading into August and then the trend reversed. For about 2 weeks, prices declined and formed a bottom, then a higher bottom, and then a third higher low. The three rising valleys signaled a trend change and doomed the downward breakout from the triangle.

Besides the market tide robbing the triangle ship of momentum, the triangle looks almost perfect. Prices touch each trend line several times, crossing the triangle and leaving no white space, but volume tends to rise instead of recede. The two minor lows near the start of the triangle do not rest on the horizontal trend line. If you were to connect those two lows with a new horizontal trendline, the breakout would have come a bit sooner, but you still would have lost money if you shorted the stock.

In the summer of 1995 and into the fall (not shown), several peaks appeared near $13. These peaks acted as support and played a role in stopping the decline. The underlying support coupled with a rising stock market truncated the decline and turned a handsome descending triangle into an ugly loser.

Statistics

Table 48.2 shows general statistics for descending triangles.

Number of formations. I dug up 1,166 descending triangles; most came from 500 stocks between mid-1991 and 1996. Another 500 stocks I used from 2000 to 2003, to encompass the bear market. The remainder of the patterns came between those dates as I found them in my daily trading activities.

Reversal or continuation. If you add the numbers, you will find that the pattern acts as a reversal 592 times and as a continuation of the prevailing price trend 574 times. Thus, descending triangles are as likely to act as continuations as they are reversals. Do not depend on the breakout direction continuing the trend leading to the pattern.

When the breakout direction agrees with the market trend (bull market, upward breakout or bear market, downward breakout), reversals tend to perform better than continuations.

Average rise or decline. Triangles in bull markets with upward breakouts are the stars, scoring a 47% rise after the breakout. Downward breakouts in a bear market also do well, with declines of 25%. The countertrend moves

Table 48.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	312	113	561	180
Reversal (R), continuation (C)	84 R, 228 C	37 R, 76 C	377 R, 184 C	94 R, 86 C
R/C performance	58% R, 43% C	27% R, 27% C	–16% R, –16% C	–26% R, –23% C
Average rise or decline	47%	27%	–16%	–25%
Rises or declines over 45%	125 or 40%	27 or 24%	19 or 3%	16 or 9%
Change after trend ends	–30%	–34%	60%	50%
Busted pattern performance	52%	43%[a]	–21%[a]	–25%[a]
Standard & Poor's 500 change	13%	–4%	1%	–9%
Days to ultimate high or low	178	86	50	32

Note: Minus sign means decline.

[a]Fewer than 30 samples.

are mediocre. The numbers strengthen the belief that you should trade in the direction of the prevailing market trend.

Rises or declines over 45%. An amazing 40% of the patterns in a bull market with upward breakouts show rises over 45%. That percentage is huge. Notice how numbers from the downward-breakout side of the street pale by comparison. Less than 10% of the triangles decline more than 45%.

Change after trend ends. Once price reaches the ultimate high or low, what happens? For upward breakouts, prices tumble about 32%, on average. For downward breakouts, the rise is about 55%. Thus, if you can determine when price has changed trend—even if you are late—you can still profit from it.

Busted pattern performance. Few triangles move less than 5%, so the sample count is small except for those with upward breakouts in a bull market. Those busted patterns have prices that rise 52% after the downward breakout turns around.

Standard & Poor's 500 change. Table 48.2 shows the influence of the general market on the postbreakout rise or decline. In a bull market, the rising market tide helped lift all boats. In a bear market, the selling pressure tended to keep upward breakouts from rising far and encouraged downward breakouts to sink even farther.

Days to ultimate high or low. Upward breakouts take longer to reach the ultimate high than downward breakouts take to reach the ultimate low. Thus, the decline in a bear market must be steeper than is the rise in a bull market. For example, the moves in a bear market were about the same, 27% up

and 25% down, yet the upward breakouts took almost three times as long (86 days versus 32 days).

What does this information mean? Be patient in a bull market for the largest gains. In a bear market, be ready to exit a trade quickly.

Table 48.3 shows failure rates for descending triangles. Triangles with upward breakouts in a bull market have the lowest break-even failure rate: 7%. Downward breakouts have the highest rate of failure.

How do you make sense of the numbers? Consider the 15% maximum price rise or decline row. Over half of the triangles with downward breakouts in a bull market drop less than 15%. That is a huge failure rate. Upward breakouts, by contrast, show just 20% failing to rise at least 15%.

Notice how the failure rates skyrocket for small changes in the maximum price. For example, triangles with downward breakouts in a bear market start with an 11% failure rate. That figure more than doubles to 23% and then almost doubles again, to 39%.

If you want to short a stock showing a descending triangle, do so only in a bear market. Trade upward breakouts from triangles in a bull market. With so many triangles failing so early in the trade, it must mean that a few triangles perform well above average. Thus, keep a close eye on your position over time. Chances are it will fail to meet your dreams.

Table 48.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. The numbers in this category are due to the way I drew each triangle, so you should ignore this row. The triangle ends when price closes above the top trend line or below the lower one (the breakout).

Table 48.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	21 or 7%	10 or 9%	91 or 16%	19 or 11%
10	35 or 11%	25 or 23%	211 or 38%	42 or 23%
15	62 or 20%	34 or 30%	300 or 53%	70 or 39%
20	81 or 26%	45 or 40%	394 or 70%	82 or 46%
25	111 or 36%	53 or 47%	449 or 80%	105 or 58%
30	131 or 42%	65 or 58%	487 or 87%	126 or 70%
35	152 or 49%	75 or 66%	513 or 91%	145 or 81%
50	198 or 63%	89 or 79%	552 or 98%	169 or 94%
75	238 or 76%	102 or 90%	561 or 100%	180 or 100%
Over 75	312 or 100%	113 or 100%	561 or 100%	180 or 100%

Table 48.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	5 days	3 days	3 days	3 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L32%, C30%, H38%	L32%, C37%, H31%	L39%, C31%, H30%	L51%, C35%, H13%
Percentage rise/decline for each 12-month lookback period	L44%, C53%, H46%	L34%, C26%, H24%	L17%, C15%, H14%	L25%, C24%, H26%[a]
Throwbacks/pullbacks	37%	52%	54%	59%
Average time to throwback/ pullback ends	10 days	11 days	11 days	10 days
Average rise/decline for patterns with throwback/pullback	36%	19%	–14%	–23%
Average rise/decline for patterns without throwback/pullback	54%	38%	–18%	–28%
Performance with breakout gap	57%	24%[a]	–16%	–20%
Performance without breakout gap	45%	29%	–16%	–26%
Average gap size	$0.23	$0.41	$0.24	$0.67
Breakout distance to apex	64%	54%	66%	58%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Yearly position. Triangles with downward breakouts tend to appear within a third of the yearly low. Upward breakouts have the breakout most often in the middle or highest third of the yearly price range.

Yearly position and performance. There is no clear consensus of where the breakout should be for the best performance. For countertrend triangles (bear market, up breakout and bull market, down breakout), the best performers have breakouts near the yearly low.

Throwbacks and pullbacks. About half the time, price completes a throwback or pullback by returning to the breakout price in 10 or 11 days, on average. When price throws back or pulls back, performance suffers. For example, triangles in a bear market that throw back rise 19%, on average. Without a throwback, the rise measures 38%. Therefore, check for overhead resistance or underlying support before trading. If a congestion zone is nearby, say less than 5% away, then it is likely that price will punch through on the breakout. Otherwise, expect a throwback or pullback.

Gaps. Sometimes gaps help postbreakout performance and sometimes they hurt. Sometimes there is no performance difference at all. For example, in a bull market with an upward breakout, gaps help performance. In a bear market, gap performance suffers. Triangles in a bull market with downward breakouts show no performance difference.

Apex distance. Price breaks out of the chart pattern between 54% and 66% of the way to the triangle apex. Triangles in bull markets tend to breakout later (about 64% or 66% of the way to the apex) than do those in bear markets (54% to 58% of the way).

Table 48.5 shows a frequency distribution of time to the ultimate high or low. Within 3 weeks' time, 56% of the patterns with downward breakouts in a bear market will reach the ultimate low. Almost a third (31%) will bottom in the first week. At the other end of the scale, 52% of the triangles with upward breakouts in a bull market will still be looking for the ultimate high after 2½ months.

Grouping the numbers, we see that downward breakouts tend to hit bottom quickly compared to upward breakouts. Bear markets with upward breakouts show a slight tendency to peak 3 to 4 weeks and again 6 to 7 weeks after the breakout, so keep that in mind. You may need to exit a trade then.

Table 48.6 shows statistics related to size.

Height. Tall patterns perform as well as or better than short ones. Select patterns taller than the median and avoid trading short ones.

Width. Wide triangles perform better than narrow ones with one exception: up breakout in a bear market. I used the median length as the separator between wide and narrow.

Average formation length. The average triangle length from start to end (a few days before the breakout due to the way they were drawn on the computer) ranges from 53 to 69 days. Triangles with upward breakouts tend to be slightly longer than are those with downward breakouts.

Table 48.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	19%	4%	7%	7%	4%	6%	7%	3%	5%	4%	34%
Bull market, up breakout	13%	6%	4%	4%	5%	3%	4%	4%	4%	3%	52%
Bear market, down breakout	31%	14%	11%	8%	8%	6%	4%	2%	1%	0%	14%
Bull market, down breakout	31%	9%	10%	7%	5%	5%	3%	3%	3%	1%	23%

Table 48.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	52%	27%	–20%	–28%
Short pattern performance	43%	27%	–13%	–23%
Median height as a percentage of breakout price	11.63%	17.33%	11.50%	17.42%
Narrow pattern performance	46%	31%	–14%	–23%
Wide pattern performance	47%	24%	–18%	–27%
Median length	47 days	56 days	44 days	45 days
Average formation length	59 days	69 days	53 days	55 days
Short and narrow performance	43%	30%	–13%	–21%
Short and wide performance	44%	20%[a]	–12%	–26%[a]
Tall and wide performance	49%	25%	–21%	–27%
Tall and narrow performance	57%	35%[a]	–18%	–28%[a]

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Height and width combinations. By far, the combination of height and width that produces the best performance is tall and narrow triangles with upward breakouts in a bull market. They soar an average of 57%! The worst performers are short and wide triangles in a bull market with downward breakouts. They show declines of just 12%.

Grouping the combinations according to breakout direction shows that those breaking out following the market trend do better than do those moving against the trend. Upward breakouts from triangles that are both tall and narrow do best. Triangles with downward breakouts tend to do better when they are both tall and wide.

Table 48.7 shows volume-related statistics.

Volume trend. Triangles following the market trend (bull market, upward breakout and bear market, downward breakout) do better when volume trends higher throughout the triangle. The countertrend triangles do better with receding volume trends.

Volume shapes. Here again, triangles following the market trend do well with U-shaped volume. Those triangles with counter market moves do better with dome-shaped volume.

Breakout volume. Heavy breakout volume helps performance across the board. Traders seeing a glass half empty would notice that the numbers are not that far apart. Even so, for the best performance, trade triangles with breakout day volume that is higher than the 30-day average.

Table 48.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	52%	21%[a]	–13%	–29%
Falling volume trend performance	45%	29%	–16%	–24%
U-shaped volume pattern performance	55%	26%	–14%	–27%
Dome-shaped volume pattern performance	41%	28%	–17%	–23%
Neither U-shaped nor dome-shaped volume pattern performance	52%	27%[a]	–17%	–25%[a]
Heavy breakout volume performance	48%	28%	–17%	–26%
Light breakout volume performance	44%	25%	–15%	–22%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Trading Tactics

Table 48.8 shows trading tactics for descending triangles.

Measure rule. As you would expect, the measure rule tries to predict the value to which prices decline after a downward breakout. Compute the height of the formation by subtracting the price of the lower trend line from the highest high in the triangle. Then, subtract the height from the value of the lower horizontal trend line (downward breakouts) or add it to the breakout price (upward breakout). The result is the target price.

Compute the height of the triangle shown in Figure 48.5 by taking the difference between the highest high and lowest low (marked by the black dots). The value is 1.44 (that is, 8.82 – 7.38). Subtract the height from the value of the horizontal trend line, or 7.38 – 1.44, giving a predicted price decline to 5.94. Prices reach the target the day of the breakout. Since the measure rule suggests the minimum price move, the final decline is often larger. In this case, the stock reached a low of 4.69 in mid-April 1994 for a total decline of 36%.

An alternative approach, which eliminates the cumbersome math, is to draw a line parallel to the down-sloping trend line starting at the lower left corner of the formation. The value of the line where prices break out of the formation becomes the target price.

Wait for confirmation. Waiting for a breakout to occur is paramount since the direction is unknown ahead of time. If you do not wait for a downward breakout before shorting the stock, prices could quickly rise away from you in an upward breakout. However, shorting a stock is not for the faint of heart and entails substantial risk. If you miss the initial breakout, you can

Table 48.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Calculate the height of the formation by subtracting the highest high from the lowest low. Subtract the height from the value of the lower trend line to get the predicted minimum price decline. Alternatively, draw a line parallel to the down-sloping trend line starting at the lower left corner of the formation. The value of this line *where prices break out of the formation* becomes the target price. For upward breakouts, add the height to the price where it pierces the top trend line.
Wait for confirmation	Since the breakout direction is unknown, always wait for the breakout to occur. After a downward breakout, sell short immediately or after prices pull back to the triangle base and start moving down again. Another way to play the formation is to wait for an *upward* breakout then *buy* the stock.
Sell on downward breakout	If you are a short-term trader, sell immediately should the stock break out downward. The likelihood is that prices will continue down. For intermediate- or long-term holders who do not want to sell, consider adding to your position once prices near the measure rule target. Use support levels to help predict the ultimate low.
Cover on measure rule	For short-term traders, cover your short positions when prices *near* the target price (see measure rule).

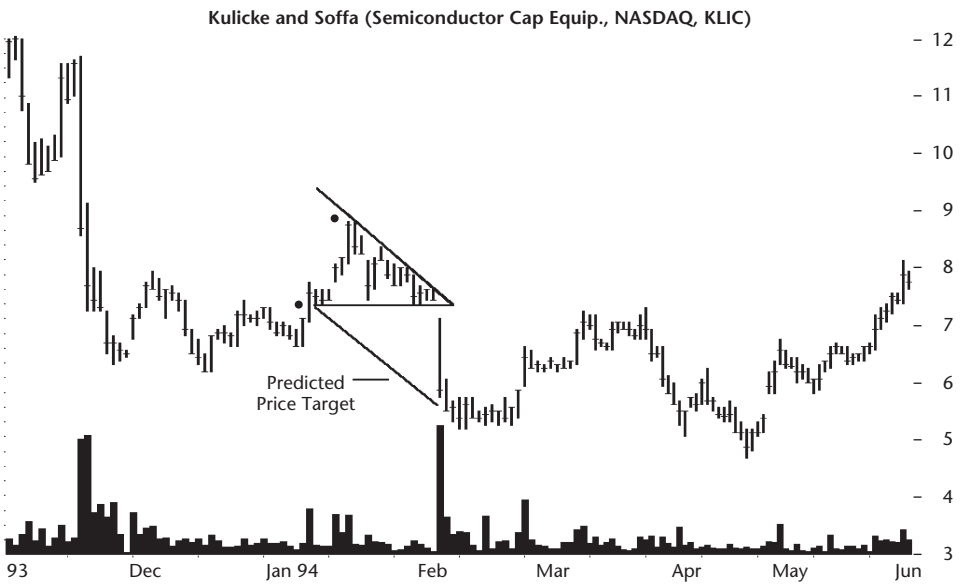


Figure 48.5 There are two ways to predict the minimum decline. Take the difference between the two trend lines at the formation start (denoted by the black dots) and subtract the result from the value of the lower trend line, or draw a line parallel to the down-sloping trend line beginning at the lower left corner. The value of the line when prices break out of the formation becomes the target price.

always short after a pullback. A pullback is also a good time to add to your short position. Wait for prices to resume falling before shorting. Cover your position when prices approach the target price or until the picture changes (either fundamentally or technically).

Sell on downward breakout. Since a downward breakout can take prices lower rapidly, the pullback typically allows you to enter the trade at a higher price than if you bought the day after a downward breakout. If the stock fails to pull back, look elsewhere for another opportunity. Do not chase the stock down should a pullback not occur. If the stock declines and you still decide to short the position, then you are probably entering near the low and setting yourself up for a disappointment.

Cover on measure rule. If you are long the stock and are an intermediate- or long-term holder and you do not want to suffer through such a decline (which could go much lower than the 16% to 25% average), consider selling the stock on the downward breakout and buying it back after it fulfills the measure rule. Remember, the measure rule suggests a *minimum* price move and yet prices meet the target only half of the time. In other words, if you sell the stock, it might not decline as far as you expect.

Sample Trade

Jacob is a novice investor. He has an MBA and works in the insurance industry, which has acclimated him to risk. Still, shorting a stock is not his first choice. The stock shown in Figure 48.6 interested him. A few days before the breakout, he ran through the qualifiers. The volume trend looked good: generally downward as you would expect until a few weeks before the breakout when it deviated from the normal pattern. The number of touches from side to side was good, and the minor highs and lows were distinct. He concluded that this was a valid descending triangle in the making.

Jacob was nervous about shorting the stock since it could turn around and climb away from him, but a stop placed at the top of the triangle would limit his risk if things did not work out. Still, he was uncomfortable shorting and really wanted to own the stock at a lower price. He decided to buy the stock after it fulfilled the measure rule.

He computed the height of the triangle and discovered that the minimum downward move would take the stock to 12.50. As Jacob watched the stock each day, he saw it break out downward and begin declining. The first time it reached the target price and recovered a bit, he suspected the stock was near its low. At least, that is what he hoped.

On October 19, 1992, Jacob bought 200 shares of the stock at the close of 12.50, exactly the target price he predicted earlier. He placed a stop-loss order at 11.13, slightly below the prior December's low of 11.25, a support level. Then, he looked at the possible reward and believed the stock would rise to its old high of 17. He sat back and waited.

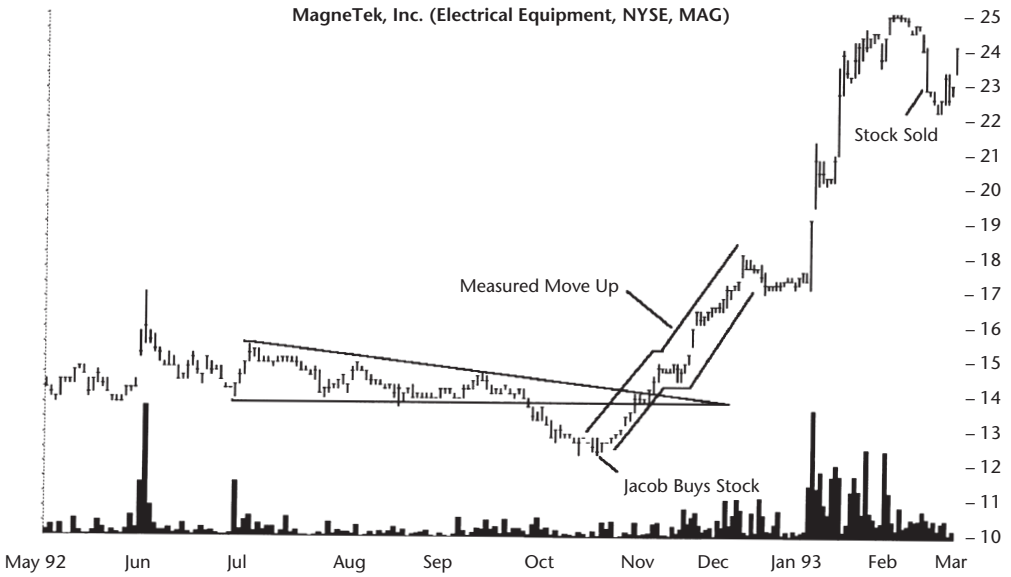


Figure 48.6 As described in the Sample Trade, instead of opening a short position, Jacob bought into the stock after the descending triangle fulfilled the measure rule. He raised his stop as prices climbed and was eventually stopped out at 23 for a $2,000 profit. A measured move up formation helped him gauge the rise.

It didn't take long for the stock to bottom out and start its climb. In mid-November, Jacob hoped the trend was the beginning of a measured move up. He calculated the difference from the low near where he bought the stock to the most recent high and came up with a value of 2.63. He added this to the current closing price and computed a new target price of 17.50. This number was quite close to his original price target of 17.

Over the next few days, the stock started moving up again. By early December it had hit his new price target and the measured move was complete. Jacob decided to raise his stop-loss point to 16, the top of a support layer. If the stock sold at 16, he would have a gain of 28%, a respectable return. The results pleased him so far, but he worried that prices would hit his stop as the stock consolidated.

Just after the new year the stock started climbing again and he held on for the ride. He kept raising his stop until he was taken out at 23, to which the stock declined in mid-February 1993. After expenses, this trade made him nearly $2,000, substantially more than his initial estimate.

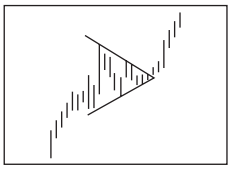
For Best Performance

The following list includes tips and observations to help select descending triangles that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 48.1.
- Select triangles in a bull market with upward breakouts or bear markets with downward breakouts—Table 48.2.
- Buy busted patterns after the downward breakout reverses—Table 48.2.
- Triangles with upward breakouts in a bull market have the lowest failure rates—Table 48.3.
- Avoid throwbacks and pullbacks by searching for overhead resistance and underlying support—Table 48.4.
- Expect the breakout about 56% (bear markets) to 65% (bull markets) of the way to the apex—Table 48.4.
- Expect a quick decline in a bear market as 56% bottom in less than 3 weeks—Table 48.5.
- Select tall patterns or patterns that are both tall and narrow (upward breakouts) or tall and wide (downward breakouts)—Table 48.6.
- Trade triangles with heavy breakout volume—Table 48.7.

49

Triangles, Symmetrical



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Price forms lower highs and higher lows following two sloping trend lines that eventually intersect. The breakout is upward.	
Reversal or continuation	Short-term bullish continuation	
	Bull Market	**Bear Market**
Performance rank	16 out of 23	7 out of 19
Break-even failure rate	9%	7%
Average rise	31%	26%
Change after trend ends	–31%	–33%
Volume trend	Downward	Downward
Throwbacks	37%	55%
Percentage meeting price target	66%	57%
Surprising findings	Busted patterns perform better than the originals. The best performance comes from patterns near the yearly low. Throwbacks hurt performance. Tall and narrow patterns perform better than other combinations.	
Synonym	Coils	
See also	Diamond Bottoms; Diamond Tops; Head-and-Shoulders Bottoms; Head-and-Shoulders, Tops; Triangles, Ascending; Triangles, Descending	

Downward Breakouts

Appearance	Same, but breakout is downward.	
Reversal or continuation	Short-term bearish reversal	
	Bull Market	**Bear Market**
Performance rank	15 out of 21	18 out of 21
Break-even failure rate	13%	9%
Average decline	17%	19%
Change after trend ends	50%	45%
Volume trend	Downward	Downward
Pullbacks	59%	62%
Percentage meeting price target	48%	42%
Surprising findings	Busted patterns perform better than the originals. The best performance comes from patterns near the yearly low. Pullbacks hurt performance. Tall and narrow patterns perform better than other combinations.	
Synonym	Same as for upward breakouts	
See also	Same as for upward breakouts	

In the first edition of this book, I split symmetrical triangles into tops and bottoms because I wanted to explore the performance difference. The difference was small, and I found out that people were accidentally referring to the wrong chapter. Therefore, I combined the two chapters in the second edition.

The Results Snapshot shows the performance for symmetrical triangles under varying market conditions and breakout directions. In my opinion, symmetricals do not perform as well as hoped. The average rise or decline is smaller than the average for all chart patterns. This finding may be, in part, due to no longer treating premature breakouts for what they are. Instead, I now consider them as actual breakouts, because that is how experienced traders trade triangles. This change makes for a higher failure rate and a smaller average rise or decline.

Tour

Figure 49.1 shows an example of a symmetrical triangle. Prices rise to the start of the formation and make a new high. Then prices cross the formation from side to side, making lower highs and higher lows. After nearly 2 months, the trends are in place. A down-sloping trend line drawn along the tops connects

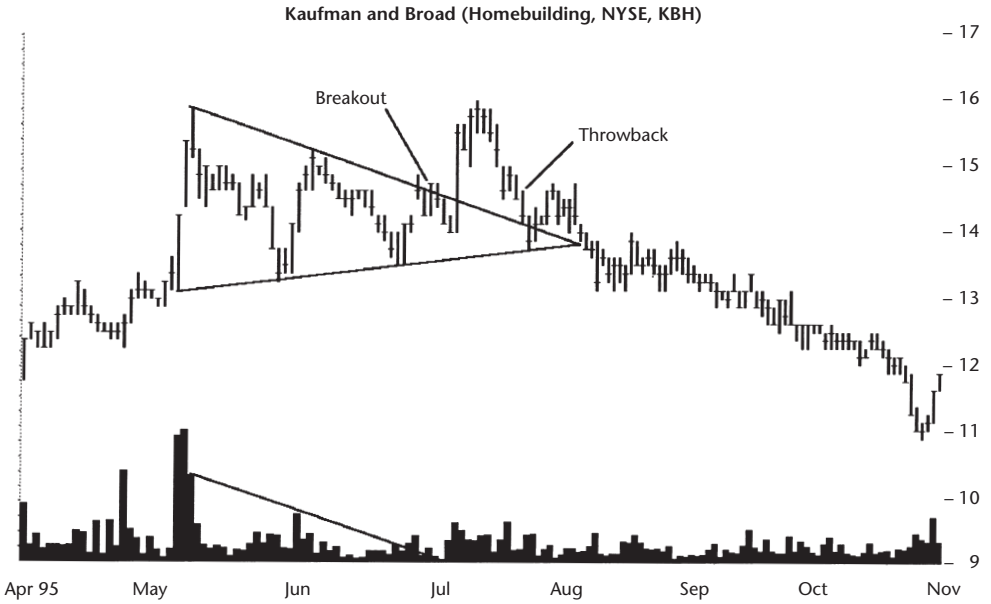


Figure 49.1 A symmetrical triangle with a small price rise.

the minor highs, whereas an up-sloping trend line on the bottom supports the minor lows.

The volume trend recedes although it is spiky in places. Price attempts to leave the formation in late June but gets sucked back in. It tries again and with higher volume shoots out the top of the triangle but quickly throws back, curls around, and heads lower.

Why do symmetrical triangles form? Prices zoom up making higher highs on succeeding days. Eventually, selling pressure quenches demand for the stock and prices turn down. Swing traders, sensing a change in trend, quickly sell their holdings, putting additional pressure on the stock. Prices fall to a level where prior support set up by a peak months earlier or various other factors entice investors to view the stock as a bargain. The price is shooting up, they reason, so why not join the trend, especially now that it is cheaper?

Such rationalizations increase demand and send the stock up again, but this time the momentum players that missed a chance to sell earlier do so now. Others, believing that there may not be enough upward momentum to carry the stock to the old high, sell too. The selling pressure halts the price rise at a lower level and turns it around.

Value investors seeing the stock drop, and since the fundamentals have not changed, buy it on the way down. Some add to their positions at a lower price and others buy it for the first time. The buying may force prices to move horizontally for a bit instead of straight down. Eventually, though, a higher low forms not so much from anxious buyers, but from a dearth of sellers.

Throughout the trend, volume is decreasing. Fewer and fewer shares change hands and it becomes easier for the stock to change direction. Eventu-

ally, though, a large buy order comes in and price rises. When it pierces the top trend line, it takes out the orders that investors have placed to buy when price rises above the trend line. This additional buying cascades and prices soar on heavy volume.

If demand is strong enough, prices continue rising. About half the time, though, prices spin around and head back to the triangle boundary—a throwback. There prices meet support at the top trend line or at the level of the triangle apex. Usually, prices rebound and continue in their original direction. Sometimes, though, prices continue down, signaling an end to the upward trend (such as that shown in Figure 49.1).

Identification Guidelines

Table 49.1 lists identification guidelines for symmetrical triangles.

Shape. Consider Figure 49.2, a symmetrical triangle with a premature upward breakout. The overall shape of the formation is triangular and defined by two trend lines: One slopes downward from the top and the other slopes upward from the bottom so that they join at the apex.

Touches. Numbers mark the minor highs and lows, which touch or come close to each trend line at least twice. That feature is important as the touches should be distinct individual hills (minor highs) and valleys (minor lows).

White space. Price must cross the triangle several times, covering any white space.

Volume. The volume pattern has a downward slope to it. Turnover may increase when price rises and declines when price falls, but the overall trend is receding. Let me say it is unusual for a symmetrical triangle to not have a

Table 49.1
Identification Characteristics

Characteristic	Discussion
Shape	A triangular shape forms within the confines of two trend lines, one sloping up and the other down so that they intersect at the triangle apex. The trend lines need not be the same length.
Touches	There should be at least two distinct minor highs and two minor lows that touch the trend lines (in other words, at least four trend reversals).
Volume	Usually recedes throughout the formation but can be irregular and is often very low just before the breakout.
White space	Price should cross the pattern, covering much of the white space.
Breakout direction	Unknown ahead of time. Occurs when price closes outside the trend-line boundary.
Duration	Typically longer than 3 weeks, at a minimum. Formations 3 weeks or less classify as pennants.

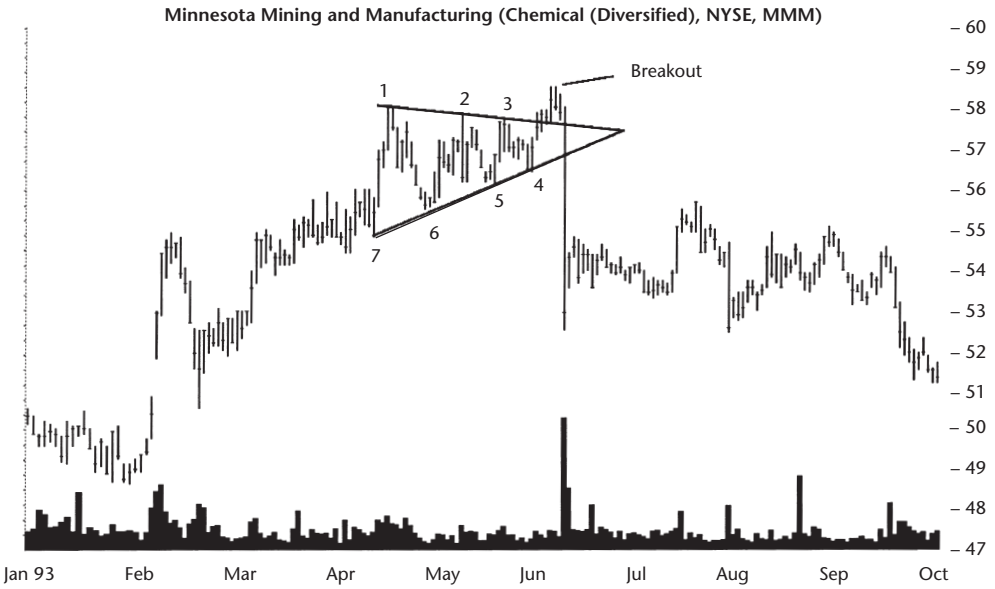


Figure 49.2 A symmetrical triangle with an upward breakout. Price closes outside the triangle but returns before the apex. In this instance, prices not only return but shoot out the other side. Numbers mark the various trend-line touches. A dead-cat bounce sees prices tumble $5 in 1 day, then bounce up, and eventually move lower.

receding volume trend, but that does not mean it will not happen. Even when volume does taper off, it may not be noticeable unless you run linear regression and look at the slope of the resulting line. However, more than 80% of the triangles do show a receding volume trend, high enough to make you consider any deviations carefully.

Breakout direction. The breakout can be in any direction, including meandering horizontally, but 54% of the time it will follow the prevailing price trend (upward breakout in an upward trend or downward breakout in a downward trend).

Duration. Symmetrical triangles can be any length, but most analysts say the minimum length is 3 weeks.

Figure 49.3 shows two triangle formations. The one on the left is not a valid symmetrical triangle. The left triangle forms beginning from the minor low at point A and rises to the minor high at point B. Then price declines following the top trend line and reaches the minor low at point C. Notice that there is only one minor high (point B) and two minor lows, but the second minor low, point C, is not included in the triangle. Not only is there a minor high and low missing, but the bottom trend line is drawn incorrectly as well. The white space in the center of the triangle is often a clue to an improperly identified formation. Prices should cross the formation and fill the space.

The second triangle shown in mid-October has plenty of minor highs and lows that touch the two trend lines. It is a valid symmetrical triangle but it has

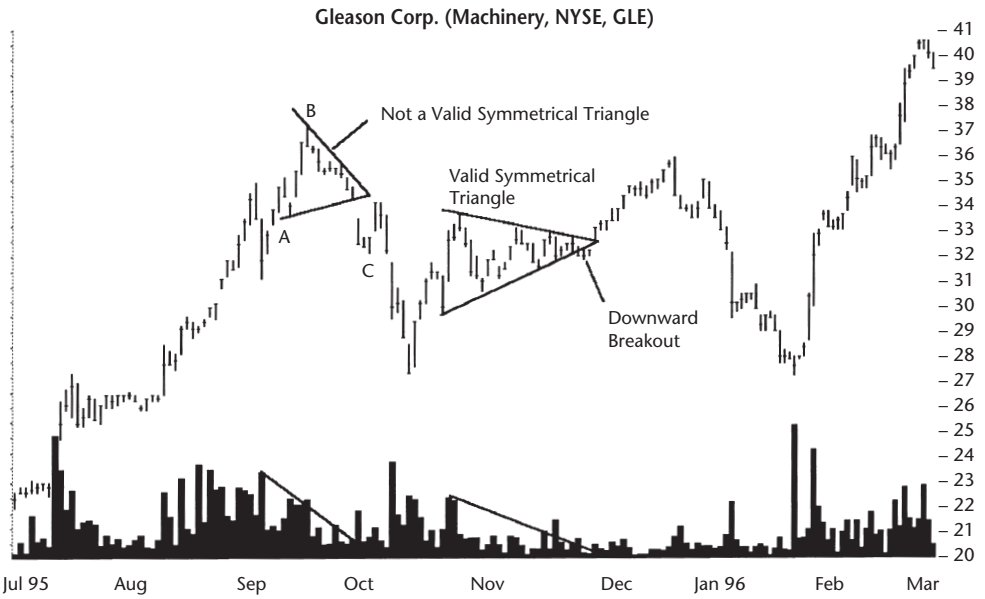


Figure 49.3 Two symmetrical triangles, one valid, the other invalid. The triangle on the right shows a premature downward breakout followed by a valid upward breakout. The triangle on the left is bogus.

a kicker. Just before the triangle apex, prices move outside the triangle trendline boundaries, pull back, and move sharply higher.

When price moves less than 5% and then returns to the triangle and stages a breakout on the opposite side, the triangle is a so-called busted pattern, and the move in the new breakout direction is likely to be large.

The volume trend is predominantly downward in both chart patterns. Volume is 60,100 shares at the start of the October triangle but recedes until the day before the breakout, when only 4,600 shares trade. Quite a decline.

Before you pronounce a chart pattern to be a symmetrical triangle, look to the left of the formation. Is there a minor high that mirrors the one on the right? If so, then you might be looking at a head-and-shoulders top.

A mirror image of the symmetrical triangle, one that is back to back with the one you have selected, probably represents a diamond top or bottom. When one of the trend lines is horizontal, then the formation is an ascending or descending triangle. All these other formations are ones that you need to search for. Many are more powerful than a symmetrical triangle and give a better gauge to the ultimate price move.

Focus on Failures

Symmetrical triangles have two types of failures. The first is one of identification, and Figure 49.4 shows an example.

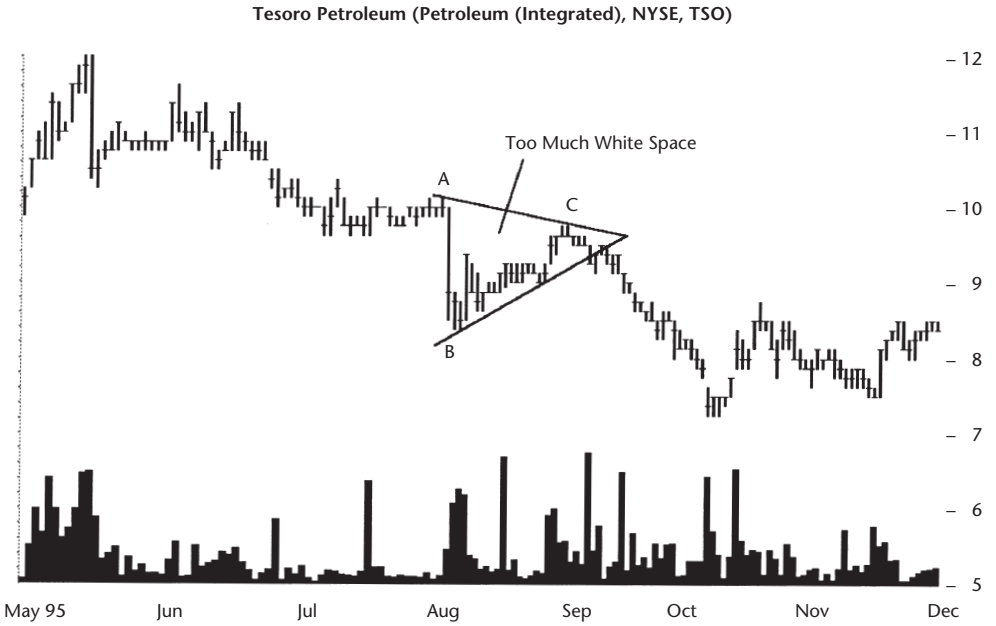


Figure 49.4 An invalid symmetrical triangle. There are not enough price crossings to fill the triangle, leaving white space predominating.

I cannot stress how important it is to have at least two minor highs and two minor lows in the formation. Many times a rounding bottom may tempt you to create a symmetrical triangle out of it. The price action seems to narrow over time but there is really only one minor high. Figure 49.4 is a good example. The pseudotriangle forms beginning with the minor high at point A and drops rapidly to the minor low at point B. Then prices meander up along the lower trend line before crossing to point C. There are not enough price crossings of the triangle to suggest a reliable formation. Although prices touch both trend lines several times, there is too much white space filling the center of the formation.

Figure 49.5 shows the second type of failure, and it is what I call a 5% failure because price fails to continue moving in the breakout direction by more than 5% before reversing. The figure shows a well-formed symmetrical triangle during February and March with two minor highs and three minor lows, all of them touching (or coming close to) their respective trend lines. The two trend lines intersect and the formation stands alone. By that, I mean it is not part of another formation. Or is it? The left peak in conjunction with the first minor high in the triangle might mark the beginning of a double top (or, if you include the second, lower, peak in January, it might be a triple top). Since prices do not fall below the lowest low between the two peaks before reaching a higher high, the formation does not confirm and is not a double (or triple) top.

However, the higher high forming as part of the throwback to the triangle apex (late March) could extend the double top into a larger triple top. Once prices tumble below the low formed between the three peaks, a triple top is

Figure 49.5 The symmetrical triangle on the left has an upward breakout that fails to rise by more than 5%. The formation is a 5% failure. The triangle is part of a double or triple top.

confirmed and prices head downward, pulling back briefly (twice) to just above the formation low before continuing down. The pullback forms another symmetrical triangle, as shown in Figure 49.5.

The big picture explains why the triangle fails. No matter whether you call this a nested triple top or a multiple top (or whatever), the word *top* in the phrase is a big clue. If it is a triple or multiple top, the breakout direction is down. The triangle breaking out upward instead of downward in this situation is suspicious. Before you invest, make sure you take a wider view; flip over to the weekly chart and see if a different situation arises from the one shown on the daily chart. Defer to the weekly chart if you see a conflict.

Statistics

Table 49.2 shows general statistics for symmetrical triangles.

Number of formations. I found 1,347 symmetrical triangles in 500 stocks from mid-1991 to mid-1996, in 200 stocks from 2000 to 2003, and the rest between those two dates. I did not do a thorough search because triangles are so plentiful and logging all of them using a mouse made my wrist sore enough that I had to use my other hand (I would consider giving my right hand to be ambidextrous).

Table 49.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	476	246	361	264
Reversal (R), continuation (C)	195 R, 281 C	104 R, 142 C	164 R, 197 C	139 R, 125 C
R/C performance	33% R, 30% C	24% R, 28% C	–17% R, –18% C	–19% R, –20% C
Average rise or decline	31%	26%	–17%	–19%
Rises or declines over 45%	144 or 30%	47 or 19%	12 or 3%	19 or 7%
Change after trend ends	–31%	–33%	50%	45%
Busted pattern performance	40%	38%	–23%	–28%
Standard & Poor's 500 change	11%	0%	2%	–9%
Days to ultimate high or low	124	77	45	30

Note: Minus sign means decline.

Reversal or continuation. Reversals make up 45% of the patterns and continuations compose the other 55%. Continuations perform marginally better than reversals in most cases. The lone exception is for triangles in a bull market with upward breakouts. There, reversals show rises averaging 33% compared with a 30% rise for continuations.

Average rise or decline. The average rise is a disappointing 31% in bull markets. This figure is well off the pace set by other chart pattern types. It suggests that as popular as symmetrical triangles are, a trader could do well to trade another type of chart pattern.

Rises or declines over 45%. Almost a third of the bull market patterns show rises of at least 45%. Although I like to see a higher number, this is still a decent showing. Downward breakouts never fare well with this measure.

Change after trend ends. After price reaches the ultimate high or low, price rebounds but the results are not impressive. Some other chart patterns show rises of 60% in a bull market after a downward breakout. *That* is the kind of rise I like to see!

Busted pattern performance. A busted triangle is a breakout in which prices move less than 5% and then return to the pattern and break out the opposite side. If you see a busted pattern and the new breakout confirms (closes outside the triangle trend line), trade the new direction and enjoy the move.

Standard & Poor's 500 change. Notice how the general market, as measured by the S&P 500 index, helped or hindered the performance of the average symmetrical triangle. Consider that the best rise is 31% in a bull market for triangles with upward breakouts. That figure corresponds to an 11%

rise in the index. A downward market helped triangles with downward breakouts in a bear market. They dropped 19%, a better showing than the 17% decline in a bull market.

What does all this mean? Trade with the market trend for the best results.

Days to ultimate high or low. Triangles in bull markets take longer to reach the ultimate high than bear markets take to reach the ultimate low. For example, downward breakouts in a bull market take 45 days to drop 17%. In a bear market, a 19% decline takes 30 days. Thus, the decline in a bear market is steeper and shorter than in a bull market.

Table 49.3 shows failure rates for symmetrical triangles. For small declines, triangles with upward breakouts in a bear market have the lowest failure rates. After a maximum price rise of 15%, triangles with upward breakouts in a bull market take over. They show smaller failure rates.

How do you read the table? I know your eyes probably glaze over when you see a table swimming with numbers, but consider the bear market, up breakout column. Seven percent of the patterns I looked at climbed less than 5%. Almost half fail before climbing 20%. The worst performer for triangles is in a bull market with downward breakouts. Half of them fail to rise at least 15%.

Say you want to shoot for the moon and make 50%. How many triangles perform that well? You would trade triangles with upward breakouts in a bull market because they post the best results. Even so, 74% will fail to climb 50% after the breakout.

Table 49.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. This row is a result of the way my computer program draws the triangles. Ignore it. I show the numbers for consistency.

Table 49.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	44 or 9%	18 or 7%	48 or 13%	25 or 9%
10	104 or 22%	44 or 18%	121 or 34%	81 or 31%
15	162 or 34%	78 or 32%	179 or 50%	126 or 48%
20	206 or 43%	115 or 47%	232 or 64%	153 or 58%
25	233 or 49%	139 or 57%	279 or 77%	193 or 73%
30	262 or 55%	162 or 66%	309 or 86%	211 or 80%
35	284 or 60%	178 or 72%	330 or 91%	226 or 86%
50	350 or 74%	210 or 85%	355 or 98%	251 or 95%
75	411 or 86%	229 or 93%	361 or 100%	263 or 100%
Over 75	476 or 100%	246 or 100%	361 or 100%	264 or 100%

Table 49.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	4 days	3 days	3 days	3 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L24%, C32%, H43%	L29%, C41%, H30%	L27%, C34%, H38%	L33%, C37%, H30%
Percentage rise/decline for each 12-month lookback period	L40%, C25%, H32%	L33%, C26%, H23%	L19%, C18%, H16%	L23%, C19%, H17%
Throwbacks/pullbacks	54%	55%	59%	62%
Average time to throwback/ pullback ends	11 days	11 days	10 days	9 days
Average rise/decline for patterns with throwback/pullback	25%	21%	–15%	–18%
Average rise/decline for patterns without throwback/pullback	38%	34%	–21%	–21%
Performance with breakout gap	35%	23%	–18%	–27%
Performance without breakout gap	31%	27%	–18%	–19%
Average gap size	$0.36	$0.23	$0.37	$0.57
Breakout distance to apex	75%	73%	73%	71%

Note: Minus sign means decline.

Yearly position. Triangles have their breakouts most often near the yearly high in a bull market and in the middle of the yearly price range in bear markets.

Yearly position, performance. Where do the best performing triangles appear? In all cases, the overachievers have breakouts within a third of the yearly low. Those are the ones to trade.

Throwbacks and pullbacks. Throwbacks and pullbacks occur just over half the time. Triangles in bear markets with downward breakouts have the highest likelihood of pulling back: 62%. On average, it takes between 9 and 11 days for the stock to return to the breakout price. When a triangle has a throwback or pullback, performance suffers. For example, triangles in a bull market that throw back show postbreakout rises averaging 25%. Without a throwback, the rise averages 38%.

To avoid a throwback or pullback, look for nearby overhead resistance or underlying support before trading the triangle.

Gaps. Gaps are important to performance when they occur in the direction of the prevailing price trend (upward breakouts in a bull market and

downward breakouts in a bear market). Countertrend triangles show the same or better performance without a gap.

Apex distance. The average distance from the start of the triangle to the breakout is about 73% of the way to the apex, which is longer than in other triangle types.

Table 49.5 shows a frequency distribution of time to the ultimate high or low. As you can see in the table, many symmetrical triangles take over 70 days to reach the ultimate high or low. However, a large portion reach their end moves in the first week. In fact, about a quarter of the up breakout triangles and over a third of the down breakout ones will reverse course in week 1.

Triangles with downward breakouts show a slight rise in the numbers during week 3 (21 days). If your stock shows signs of a trend reversal around that time, then close out your short or put on a long trade. Protect your position with a stop.

Table 49.6 shows statistics related to size.

Height. Tall patterns perform better than short ones under all market conditions and breakout directions. For the best performance, select a tall pattern, as measured from the highest minor high to the lowest minor low. Divide the results by the breakout price and compare it to the median in the table. If your result is above the median, then you have a tall pattern.

Width. Wide patterns also perform better, except for triangles in a bear market with downward breakouts. I used the median length shown in the table as the separator between wide and narrow.

Average formation length. The average triangle length is about 50 days, or just shy of 2 months long.

Height and width combinations. In all cases, triangles that are both tall and narrow outperform. The combined performance of height and width is better than the individual performance. For example, the 41% rise in a bull market after an upward breakout is better than the 38% rise for tall patterns and the 33% rise for wide ones.

Table 49.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	26%	9%	6%	7%	6%	4%	6%	2%	1%	1%	32%
Bull market, up breakout	22%	8%	8%	3%	4%	3%	4%	3%	1%	3%	41%
Bear market, down breakout	38%	8%	10%	9%	9%	4%	3%	5%	2%	2%	11%
Bull market, down breakout	34%	8%	9%	7%	6%	4%	4%	3%	3%	4%	20%

Table 49.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	38%	30%	–19%	–20%
Short pattern performance	26%	23%	–16%	–19%
Median height as a percentage of breakout price	14.48%	18.10%	14.50%	18.04%
Narrow pattern performance	30%	24%	–17%	–20%
Wide pattern performance	33%	28%	–18%	–18%
Median length	42 days	38 days	39 days	36 days
Average formation length	51 days	50 days	50 days	46 days
Short and narrow performance	25%	21%	–17%	–19%
Short and wide performance	28%	25%	–15%	–19%
Tall and wide performance	36%	30%	–19%	–18%
Tall and narrow performance	41%	31%	–20%	–23%

Note: Minus sign means decline.

Before trading, look for triangles that are both tall and narrow. If you cannot find one, then look for triangles that are taller than the median (see Height).

Table 49.7 shows volume-related statistics.

Volume trend. The volume trend splits between those triangles with breakouts in the direction of the prevailing trend and the countertrend triangles. Those following the trend do best with falling volume; countertrend triangles do best with rising volume.

Volume shapes. Triangles with upward breakouts in a bear market perform best when accompanied by U-shaped volume. They rise 32%, well above the performance of the other two shapes. The volume shape is less important to the other symmetrical triangles with different breakout directions and market conditions.

Breakout volume. In all cases but one, heavy breakout volume helps performance. The lone holdout is for triangles in a bear market with downward breakouts. They do best after a light volume breakout.

Trading Tactics

Table 49.8 outlines trading tactics.

Measure rule. There are two types of measure rules for symmetrical triangles. Figure 49.6 shows the first one. Compute the formation height from

Table 49.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	26%	30%	–20%	–19%
Falling volume trend performance	32%	26%	–17%	–20%
U-shaped volume pattern performance	31%	32%	–18%	–19%
Dome-shaped volume pattern performance	31%	24%	–17%	–20%
Neither U-shaped nor dome-shaped volume pattern performance	30%	23%	–19%	–20%
Heavy breakout volume performance	35%	29%	–19%	–19%
Light breakout volume performance	24%	22%	–15%	–20%

Notes: Minus sign means decline.

highest high (point B at 9.75) to lowest low (point A at 8.38). Either add to or subtract the difference, 1.37, from the breakout price depending on the breakout direction. In this case, the breakout is upward, so the target price becomes 10.50 (that is, 9.13 + 1.37). Prices reach the target in less than a month.

Some symmetrical triangles act like larger versions of pennants. They are half-staff formations and mark the halfway point in a move (like a measured

Table 49.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute the formation height by subtracting the lowest low from the highest high. For upward breakouts, add the difference to the highest high or for downward breakouts, subtract the difference. Alternatively, symmetrical triangles can be halfway points in a move, so project accordingly.
Trade with trend	As consolidations, prices usually leave the triangle in the same direction as when they enter.
Wait for breakout	Always wait for the breakout in case the triangle reverses.
Trade busted patterns	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.
Intrapattern trade	If the triangle is tall and long enough, sell or go short at the top trend line and buy or cover at the bottom one. Cover at the breakout if it goes against you, or stop trading once prices near the apex.

move up or down formation). Had the triangle broken out downward, it might have continued down and fulfilled the measure rule. In such a case, the measure from point C (on the left at 11.88) to point A should be subtracted from the value of point B. The result is the target price of 6.25. Point C is the start of the move leading to the triangle and the measure rule applies just as in a measured move up or down formation.

Use one or both measure rules as appropriate to the situation. The first method, using the formation height, is the more conservative of the two and more likely to be fulfilled.

Trade with trend. It is difficult or impossible to determine in which direction price will break out. Generally, it continues the prevailing trend. Even in Figure 49.6, although the formation acts as a short-term reversal of the downward trend, the longer-term trend is upward (not shown in the figure).

Wait for breakout. Always wait for a breakout. Occasionally, price squeezes out the triangle apex and has no breakout at all. This is a rarity, but it does happen. Once price breaks out, trade with the trend: Go long if price breaks out upward and short on downward breakouts.

Trade busted patterns. I have noticed that even when price breaks out in an adverse direction (a reversal of the prevailing trend), it quickly reverses again and resumes the original trend. This means, for example, in an upward trend price breaks out downward and falls by 5%, then heads back up and finishes much higher. Figures 49.2 and 49.3 show examples. This behavior for reversals is something to watch out for, especially for downward breakouts in a raging bull market. Trading these busted patterns can be profitable.

Intrapattern trade. Another way of trading triangles is to buy near the lower trend line, sell near the upper one, and then go short. Occasionally, a symmetrical triangle is tall enough and long enough that you can profitably trade it in this manner, but you have to be nimble. If you are inexperienced, be sure to practice this on paper before trying it with real money.

Sample Trade

Can you make money on symmetrical triangles? Yes. Consider the trade I made in the stock shown in Figure 49.6. There were a number of factors that led me to this stock, including a rising rig count, rising oil prices, cold weather, and related political events (OPEC tightening and possible oil boycott against Nigeria). All of these factors suggested the price of oil during the winter would continue rising and demand for the oil field services industry would remain strong.

Another factor was that the stock price was riding along the bottom of a trend channel. The method used to create the trend channel is somewhat complicated but it involves drawing a line using linear regression on the closing prices and then plotting two lines parallel to the regression line, each two stan-

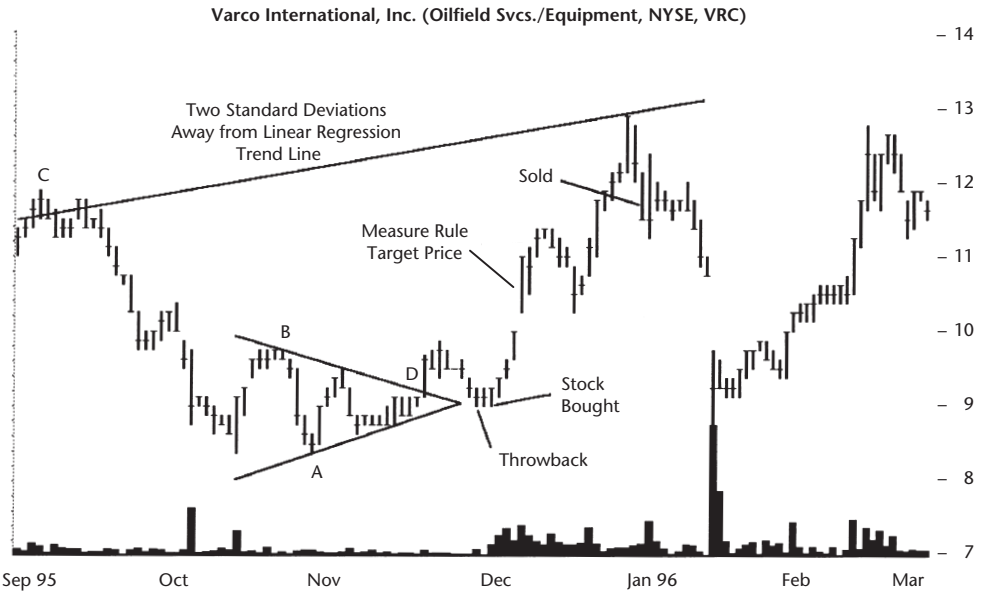


Figure 49.6 Measure rule for symmetrical triangles. Use the measure rule to predict the target price. Subtract the low (point A) from the high (point B) and add the difference to the breakout (point D).

dard deviations away. Figure 49.6 shows the upper line of the channel. I did not draw the lower line, but it intersects point A and is parallel to the top channel line. The trend channel suggests prices would move from one side of the channel to the other.

Since the upward breakout was on weak volume, I decided to hold off and wait for a throwback. This was a risky maneuver, but it worked out. On December 1, I bought the stock and received a fill at 9.13.

The apex of a symmetrical triangle is often a place of support or resistance. You can see this on the chart. Prices declined to the apex and stayed there for 3 days. As predicted, the stock took off and climbed after that. Even though the stock fulfilled the measure rule, I suspected that it would continue crossing to the upper channel line. The stock stalled out midway across the channel, pausing at the linear regression line (not shown, but it is equidistant between the top channel line and point A). This pause is often the case and I was anticipating it.

In about a week, prices started moving up again and quickly made a new high. When prices touched the top of the trend channel, I considered selling but did not for tax reasons. I decided to hold off until the new year—just 2 trading days away. On January 2 I sold the stock and received a fill at 11.63. The delay in selling dropped my return from nearly 40% to 27%. Still, that is not a bad return for a hold time of 1 month!

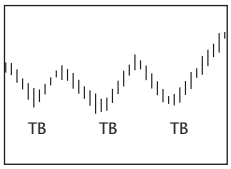
For Best Performance

The following list includes tips and observations to help select symmetrical triangles that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 49.1.
- Trade triangles with breakouts following the market trend (upward breakouts in a bull market, downward breakouts in a bear market)—Table 49.2.
- Trade busted patterns—Table 49.2.
- Triangles with upward breakouts in a bear market have low failure rates for small moves (up to 15%), but triangles in a bull market do better for larger moves—Table 49.3.
- Select triangles with breakouts near the yearly low—Table 49.4.
- Throwbacks and pullbacks hurt performance—Table 49.4.
- Expect a breakout 73% of the way to the apex—Table 49.4.
- A quarter to a third of the triangles reach their ultimate move in week 1. Expect a trend change in week 3 for triangles with downward breakouts—Table 49.5.
- Select tall patterns or triangles that are both tall and narrow—Table 49.6.
- Trade triangles that have heavy breakout volume—Table 49.7.

50

Triple Bottoms



RESULTS SNAPSHOT

Upward Breakouts

Appearance	Three distinct minor lows at about the same price	
Reversal or continuation	Short-term bullish reversal	
	Bull Market	**Bear Market**
Performance rank	7 out of 23	8 out of 19
Break-even failure rate	4%	8%
Average rise	37%	23%
Change after trend ends	–33%	–36%
Volume trend	Downward	Downward
Throwbacks	64%	61%
Percentage meeting price target	64%	57%
Surprising findings	Throwbacks hurt performance. Narrow patterns perform better than wide ones.	
See also	Broadening Bottoms; Broadening Formations, Right-Angled and Descending; Broadening Wedges, Descending; Head-and-Shoulders Bottoms; Head-and-Shoulders Bottoms, Complex; Triangles, Descending	

The surprising thing about triple bottoms is their lack of surprises. More about that in a moment. In a bull market, triple bottoms have a low failure rate and a

high average rise. In a bear market, the results are about what you would expect from a bullish pattern in a bear market.

Almost two out of three triple bottoms will throw back, so consider that before you trade. If price continues down after the throwback, then your trade may well end up with a loss. If it rebounds, the numbers suggest that performance will suffer. In other words, the best performers are triple bottoms without throwbacks.

Another surprise is that narrow patterns perform better than wide ones. Usually, width is not a good indicator of performance but height is. The reason for that unusual behavior is unclear. Of one thing I am certain, triple bottoms in a bear market act differently than those in a bull market. Often the results are opposite. For example, when the last bottom is above the middle bottom, performance excels in a bull market but underperforms in a bear market.

Tour

Figure 50.1 shows an example of a triple bottom. Prices descend to the 37 area three times and each time, they turn away; the level marks a zone of support preventing future declines. The sharp V-shaped recession, especially during the last valley, is typical for triple bottoms. The rounded-looking rise from the first valley to the second is also characteristic of triple bottoms but not a strict requirement.

Figure 50.1 A somewhat unusual triple bottom as it forms in the middle of a rising price trend. Prices eventually rise to 67.50 from the confirmation level of 46.50.

The price level of the three valleys is nearly the same, in this case, within $0.38 of one another. That feature is a key element of triple bottoms as we see in the Identification Guidelines section.

Each chart formation is unique with characteristics that distinguish it from other patterns, and the one in Figure 50.1 is no exception. The stock reaches a low in mid-October 1992, after trending down for 5 months. Then prices retrace their losses and stray into new high territory before heading down to the first triple bottom low. Support reached during formation of the first low is set up by the peak back in May 1992. Prices climb to the 37 area several times from January to May but fail to burst through the resistance.

The multiple hits on the ceiling are in no small measure responsible for the support the triple bottom encounters. As prices descend to 37, investors willing to part with their shares at the lower level are scarce. When someone does offer to sell, buyers snatch the stock believing they are getting a good bargain. They are right. Prices do not meander at the 37 level for long. If you look closely at Figure 50.1, each valley floor is a 1-day downward spike, albeit small but visible.

The start of the formation, from the first to the second bottom, looks like a broadening top, right-angled and ascending, with its horizontal bottom and up-sloping top trend line. However, there are not enough price crossings to validate the formation. It always makes me nervous when I see plenty of white space in a formation (such as that shown between the first and second bottoms). When the rise between the second and third troughs fails to come anywhere near the up-sloping trend line, the jig is up.

Prices stop rising at the same point, about 46, making the triple bottom look like a double top. This pattern, too, fails to come to fruition when prices reach the 37 support zone and turn around. The double top remains unconfirmed and it just becomes another two bumps on the price chart.

Price eventually punches through the overhead resistance and continues higher, following a near straight-line run. In this example, the triple bottom acts as a consolidation of the uptrend.

Identification Guidelines

Table 50.1 outlines the guidelines for identifying triple bottoms.

Three bottoms, price. I think most technical analysts will tell you that not any three bottoms will do for a triple bottom. The three bottoms are usually large and well separated with generally rounded rises in between. The lowest price in each bottom is at about the same level. If the center price is lower than the other two, then you might be looking at a head-and-shoulders bottom. When the bottoms are successively lower in price, it might be one of the broadening series of formations.

Volume. The volume trend usually recedes over the course of the formation. Since the formation tends to be long, the volume pattern appears

Table 50.1
Identification Characteristics

Characteristic	Discussion
Three large, distinct bottoms	Look for three minor lows, well separated and distinct. The bottoms are usually large but sharp, and the price rise between them often appears rounded but need not be.
Same price	The price variation among the three bottoms is minor. The center bottom should not be significantly below the other two, otherwise it is a head-and-shoulders bottom.
Downward volume trend	The overall volume trend is usually downward but may be high in each of the three bottoms. Volume is usually highest on the first bottom and weakest on the last one.
Confirmation point	Price must rise above the highest high in the formation (the confirmation point) or the chart pattern is not a triple bottom.
Weekly chart	Since triple bottoms are usually large price formations, look at the weekly chart to help identify the longer variety.

ragged or irregular at times. Each of the three bottoms usually shows volume that peaks above the days leading to the bottom, with the first bottom usually having the highest volume of the trio.

Confirmation point. Figure 50.2 shows a good example. Notice the three downward price recessions. They are distinct and separated, with the rally between each bottom quite pronounced. Price rises from the low of about 35 to the confirmation line just over 40. The confirmation line is the highest

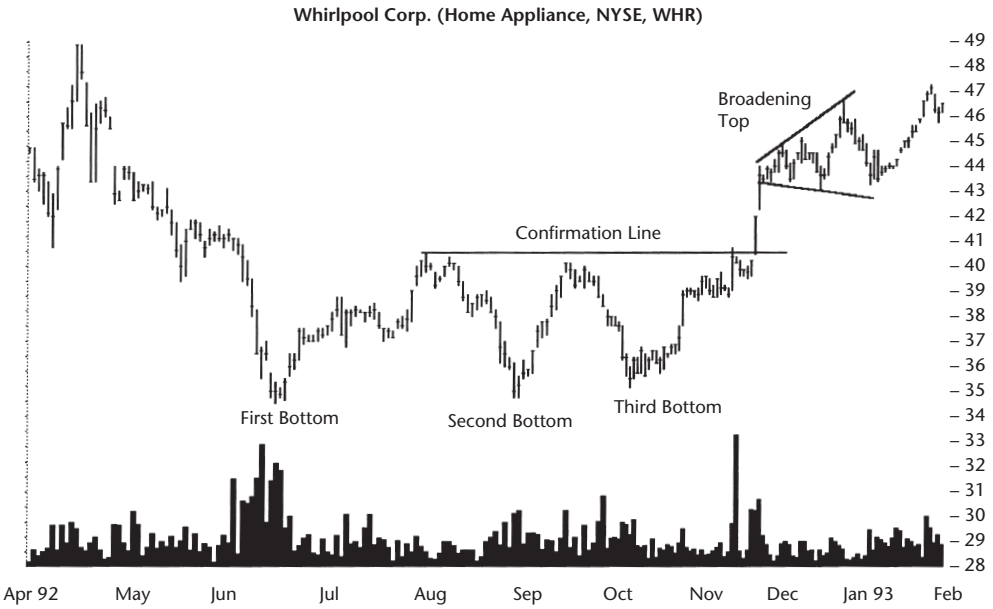


Figure 50.2 A triple bottom with three widely spaced, distinct troughs. A broadening top appears in mid-November.

high reached during the chart pattern. It serves as the breakout point, the point to which price must rise before any three minor lows become a true triple bottom. When price rises above the confirmation line, the formation confirms and price should continue rising.

You can see in Figure 50.2 that the three bottoms are at nearly the same price. Only the last bottom falls short of the goal. As we see in the Statistics section, this often signals a better performing formation. This triple bottom is the beginning of a large, extended move that takes prices from a low of 34.50 to a high of 73.50 in 16 months.

The volume trend in this formation is downward with the largest concentration of high volume on the first bottom. The center bottom has subdued volume and is even lower on the third bottom in early October. Volume spikes upward as price rises to the confirmation point in mid-November.

Weekly chart. Triple bottoms are usually large enough to be visible on weekly charts.

Focus on Failures

Once price reaches the confirmation line, it usually has been rising for about a month, on average, since the third bottom. Price often pierces the resistance line but doubles back, hesitating before continuing up—most of the time. In some cases, price rises above the confirmation point by less than 5% before throwing back and continuing down. When that happens, it is called a 5% failure. In this study of triple bottoms, all chart patterns must stage an upward breakout (a rise above the highest high in the formation) before being labeled a triple bottom. Since all formations have upward breakouts, only 5% failures remain to wipe the warm glow of a successful investment from a novice investor's face. Fortunately, 5% failures are rare. Figure 50.3 shows an example of such a failure.

The formation is a triple bottom since price rises above the confirmation line in mid-September. But the rise is brief—only 1 day has a close above the confirmation line before price tumbles.

What are the signs of a budding failure? In this situation, the curved rise leading to the triple bottom suggests a rounding top. The volume pattern is suspiciously flat, but an irregular or abnormal pattern is common and should not automatically disqualify a formation. Perhaps the most likely failure is not one of performance but of identification. Are the three bottoms well separated, each a significant minor low in its own right? Are the low prices near to one another without the center bottom being meaningfully below the other two?

As you look at the formation, it should take on a striking appearance and almost shout, "Yes, I am a triple bottom!" There should be something familiar, a special quality that distinguishes a valid triple bottom from any other three-lump configuration. If it does not scream, "Buy me!" then you should probably look elsewhere.

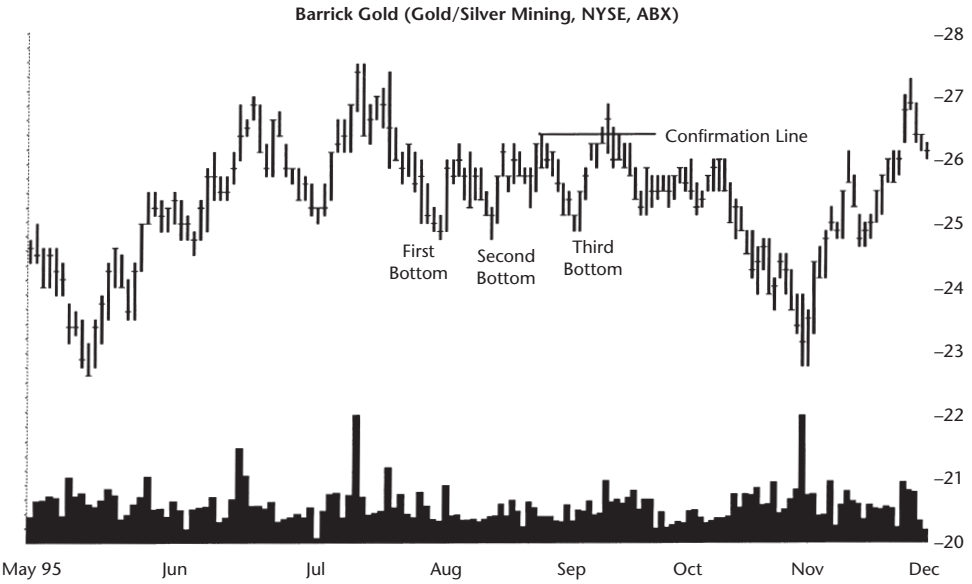


Figure 50.3 A triple bottom failure. This triple bottom fails to make a convincing upward run. It is a 5% failure since prices fail to rise by more than 5% before tumbling.

Statistics

Table 50.2 shows general statistics for triple bottoms.

Number of formations. I searched 500 stocks from mid-1991 to mid-1996 and 220 from 2000 to 2003 and another 300 from 1999 to 2004. I also included any patterns I found in my daily trading between those dates. This study accepted many shorter patterns (mainly in a bear market), balancing the longer ones I found in the first edition of the *Encyclopedia* (bull market).

Reversal or continuation. As Table 50.2 shows, triple bottoms act as reversals of the downward price trend most of the time. However, in a bull market, those acting as continuations of the upward price trend performed slightly better than reversals (38% versus 35%, respectively). In a bear market, the results flip, with reversals doing marginally better.

Average rise. The average rise in a bull market is slightly above that posted by other bullish chart patterns, but the bear market rise is slightly below the average (of all other chart pattern types). This finding suggests you concentrate on triple bottoms in a bull market.

Rises over 45%. Both markets do well with this benchmark, but the bull market excels with nearly a third (32%) rising at least 45%. The bear market has about half that rate (17%) doing well.

Change after trend ends. Once price reaches the ultimate high, it tumbles an average of 33% to 36%, depending on market conditions. Thus, if you can determine when the trend changes, short the stock but use stops in case you are wrong.

Table 50.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	286	316
Reversal (R), continuation (C)	251 R, 35 C	211 R, 105 C
R/C performance	35% R, 38% C	23% R, 22% C
Average rise	37%	23%
Rises over 45%	92 or 32%	54 or 17%
Change after trend ends	–33%	–36%
Busted pattern performance	–29%[a]	–38%
Standard & Poor's 500 change	17%	–2%
Days to ultimate high	165	80

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Busted pattern performance. Triple bottoms with upward breakouts in which prices move less than 5% and then drop tumble between 29% and 38%. These busted bulls make good short candidates because they are easy to spot. Short them as soon as you are confident the stock is going down.

Standard & Poor's 500 change. In a bull market, the index climbed 17%, helping lift the average rise. In a bear market, the 2% decline is weak but still restrains the upward climb after a triple bottom breakout.

Days to ultimate high. Notice that it takes twice as long to reach the ultimate high in a bull market than in a bear market, on average. Since the price rise in a bull market is not double the bear market one, the rise in a bear market must be steeper than in a bull market. This information suggests that if you trade this in a bear market, be prepared to take profits quickly. The climb is apt to be steep and quick.

Table 50.3 shows failure rates for triple bottoms. The rates start small, single digits, but climb rapidly. For example, 4% of triple bottoms in a bull market fail to rise at least 5%. This figure quadruples to 16% failing to rise at least 10% and 28% failing to climb at least 15%. Half the bull market patterns will fail to go up less than 30%, and half in a bear market will rise less than 20%.

The numbers may sound alarming but they are better than other chart patterns. Still, the results emphasize that you should trade a triple bottom in a bull market for the best average rise.

Table 50.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. It takes about a month for prices to climb from the third bottom to the breakout (the price of the highest high in the pattern). Since the bear market rise is steeper, it takes less time.

Yearly position. Most patterns have breakouts near the yearly high. In fact, they appear almost twice as often near the yearly high than the low.

Table 50.3
Failure Rates

Maximum Price Rise (%)	Bull Market	Bear Market
5 (breakeven)	12 or 4%	24 or 8%
10	45 or 16%	65 or 21%
15	79 or 28%	116 or 37%
20	107 or 37%	159 or 50%
25	132 or 46%	199 or 63%
30	150 or 52%	217 or 69%
35	167 or 58%	239 or 76%
50	208 or 73%	275 or 87%
75	243 or 85%	297 or 94%
Over 75	286 or 100%	316 or 100%

Yearly position, performance. The best performance comes from triple bottoms with breakouts in a bull market in the middle of the yearly trading range. In a bear market, breakouts near the yearly low do best.

Throwbacks. A throwback occurs in almost two out of three trades, and it takes about 9 or 10 days for the stock to return to the breakout price. When a throwback occurs, performance suffers. For example, in a bull market, the average rise when a throwback happens is 34%. Without a throwback, the rise averages 41%.

Gaps. In a bull market, gaps hurt performance. That finding may surprise many traders used to trading gaps and seeing them as beneficial. In my

Table 50.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	35 days	25 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L23%, C37%, H40%	L23%, C34%, H42%
Percentage rise for each 12-month lookback period	L34%, C38%, H36%	L29%, C24%, H20%
Throwbacks	64%	61%
Average time to throwback ends	10 days	9 days
Average rise for patterns with throwback	34%	21%
Average rise for patterns without throwback	41%	26%
Performance with breakout day gap	34%	23%
Performance without breakout day gap	38%	23%
Average gap size	$0.51	$0.63

Table 50.5
Frequency Distribution of Days to Ultimate High

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	14%	8%	9%	6%	8%	7%	4%	3%	5%	2%	34%
Bull market	15%	4%	5%	4%	2%	5%	2%	3%	2%	2%	55%

research, the results are mixed. Some gaps hurt performance and some help. In a bear market, performance is unchanged with or without gaps.

Table 50.5 shows the time it takes prices to reach the ultimate high. Many patterns take over 70 days before they top out. At the other end of the table, 14% to 15% reach the ultimate high in the first week. Notice the spike in a bear market about day 35. If a triple bottom shows weakness a month into the trade, then consider closing out your position. That weakness may signal a trend change. The bull market shows a slight rise at day 42 (6 weeks after the breakout), when 5% of the patterns top out. That percentage may not sound like much, until you experience a flameout.

Table 50.6 shows size statistics for the triple bottom pattern.

Height. Triple bottoms are one of the few chart patterns in which short ones outperform tall ones. However, this characteristic turns up only in a bull market, and it may be due to the many small patterns I added to this study.

Width. Narrow patterns perform better than wide ones with the bear market showing a wider performance gap—24% versus 21%. I used the median length as the separator between wide and narrow.

Average formation length. Bull market patterns are wider (3 months) than bear market ones (2 months). This finding may be due to a large number

Table 50.6
Size Statistics

Description	Bull Market	Bear Market
Tall pattern performance	34%	23%
Short pattern performance	39%	23%
Median height as a percentage of breakout price	18.66%	16.26%
Narrow pattern performance	37%	24%
Wide pattern performance	36%	21%
Median length	78 days	43 days
Average formation length	99 days	60 days
Short and narrow performance	39%	25%
Short and wide performance	38%	18%
Tall and wide performance	35%	23%
Tall and narrow performance	32%	23%

of small patterns I added to this study in a bear market. I remember deleting a few wide patterns from the weekly chart simply because they did not fit on my daily price screen without massive scrolling.

Height and width combinations. The best performance comes from the short and narrow combination for both bull and bear markets. Avoid tall and narrow ones in a bull market and short and wide triple bottoms in a bear market. They underperform.

Table 50.7 shows volume statistics for triple bottoms.

Volume trend. The results are close, but in a bull market, triple bottoms with a rising price trend tend to outperform. In a bear market, the results swap, with falling volume showing the better performance.

Volume shapes. In a bull market, triple bottoms with dome-shaped volume perform significantly better than the other shapes. In a bear market, triple bottoms with U-shaped volume do well.

Breakout volume. With triple bottoms, it seems that patterns in bull markets act one way and in bear markets, they work the other way. Triple bottoms with light breakout volume do well in a bull market, but heavy breakout volume works well in a bear market.

Average rise. I computed the 5-day average volume surrounding the second and third bottoms and then mapped performance. I found that when volume on the last bottom was below the center bottom, performance improved in a bull market but deteriorated in a bear market.

Table 50.8 shows miscellaneous statistics. I looked at the price of the lowest low in the middle (bottom 2) and last (bottom 3) valleys in the triple bottom. The best performance in a bull market (43% rise) came when the last bottom had a higher price than the middle bottom. In a bear market, that same combination resulted in the worst performance (21%).

Table 50.7
Volume Statistics

Description	Bull Market	Bear Market
Rising volume trend performance	38%	22%
Falling volume trend performance	36%	23%
U-shaped volume pattern performance	32%	26%
Dome-shaped volume pattern performance	41%	22%
Neither U-shaped nor dome-shaped volume pattern performance	35%	20%
Heavy breakout volume performance	35%	24%
Light breakout volume performance	42%	20%
Average rise when bottom 3 volume is above bottom 2	35%	24%
Average rise when bottom 3 volume is below bottom 2	38%	22%

Table 50.8
Miscellaneous Statistics

Description	Bull Market	Bear Market
Average rise when bottom 3 is above bottom 2	43%	21%
Average rise when bottom 3 is equal to bottom 2	29%	25%[a]
Average rise when bottom 3 is below bottom 2	32%	25%

[a]Fewer than 30 samples.

If trading this pattern in a bull market, select triple bottoms with a higher third valley for the best performance.

Trading Tactics

Table 50.9 shows trading tactics for triple bottoms.

Measure rule. The measure rule predicts the minimum price move. To use it, subtract the lowest low from the highest high reached in the formation and then add the difference to the highest high. The result is the expected minimum price move. For example, consider the triple bottom shown in Figure 50.4. The lowest low occurs on the first bottom at 21.25. Price reaches the highest high during the rally from the first bottom to the second. The confirmation point is the highest high in the formation because price must rise above this level before the formation confirms as a true triple bottom. In this example, the confirmation point is 25.75. The difference between the high and the low, 4.50, is the formation height. Add the height to the confirmation point to get the target price, namely, 30.25. Prices hit the target in early July.

Table 50.9
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute formation height from highest high to lowest low in the formation. Add the height to the highest high. The result is the expected minimum price move.
Wait for confirmation	Since most triple bottom formations continue heading down, always wait for price to rise above the highest high reached in the formation (the confirmation point).
Trade the trend line	Draw a line connecting the highs. If it slopes down, buy when price closes above it.
Wait for throwback	Almost two-thirds of the formations throw back to the breakout price, so consider waiting for the throwback before investing or adding to your position.
Stop loss	Place a stop-loss order 0.10 below the lowest low. Raise your stop as prices rise.

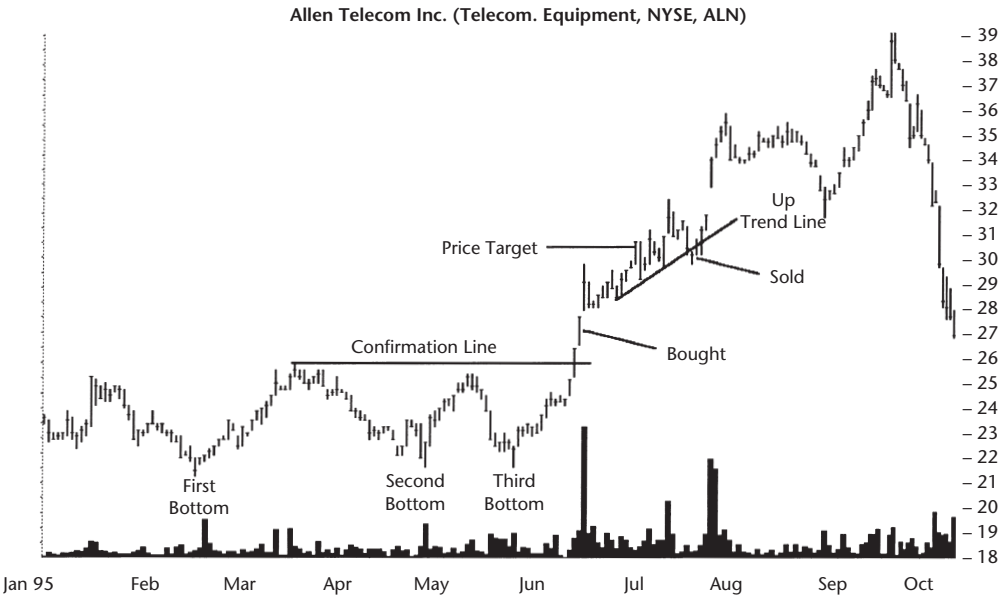


Figure 50.4 This triple bottom acts as a consolidation of the upward trend. As described in the Sample Trade, Russell rode this triple bottom up but exited too soon. Several months after he sold, the stock was trading near 16.

Wait for confirmation. When is a triple bottom not a triple bottom? When price fails to rise above the confirmation point. Always wait for confirmation. On average, it takes about a month to get there, but it is well worth the wait. The longest time it took to reach the confirmation point in the formations I looked at is 207 days—almost 7 months. Was the gain worth waiting for? Yes, prices rose by 54%!

Trade the trend line. In those patterns with a down-sloping trend line—a line joining the twin highs in the pattern—buy the stock when price closes above the trend line. That strategy will get you in sooner, lowering your risk of failure.

Wait for throwback. If you invest before the formation confirms, prices will likely resume their original trend. If the prevailing trend is down, prices will likely tumble below the support level shown by the three bottoms. At other times, prices will remain flat for an extended period (up to a year or more). Once price pierces the confirmation point, should you invest? Not necessarily. Many, but not all, formations throw back to the confirmation price level. This is perhaps not so much a throwback in the traditional sense as it is a meandering down of prices. They pause at the breakout point and move sideways for a time, gathering strength for the push upward. That pause is when you often see a 1-day downward spike that tags the confirmation price—a throwback—if it occurs within 30 days after confirmation.

At other times, prices return to the confirmation point quickly, usually in less than 2 weeks but certainly no more than a month. It is at these times that you should invest or add to your position. However, do not invest immediately. The time to jump in is once prices flip around after the throwback and start heading up again. Otherwise, you risk throwing good money after bad as prices throw back and continue moving down. Do not let me scare you. This scenario rarely happens, but it does happen.

Stop loss. If you are so unlucky as to misidentify a triple bottom or perhaps catch one that fails, then be sure to place a stop-loss order about .10 below the lowest low. The three lows mark a point of support, so you will want to be just under that point to give the stock every opportunity to rebound before being taken out.

If the decline to the stop point is too far, place your stop .10 below a nearer support zone. Raise your stop as prices rise; that way you will be cashed out at the first sign of trouble.

Sample Trade

Russell is an engineer working in the telecommunications industry. He once said that the half-life of an engineer's knowledge is 10 years. "After twenty years, there's nothing left! That's when it's time to hide from management." Before his time comes, he hopes to have a nest egg of funds accumulated from investing in stocks with which he is familiar.

He is a player, a position trader who might be in a stock for a week or two, while at other times he takes a longer view. Occasionally, his positions last for years; these are the most profitable.

He invested in the stock shown in Figure 50.4 well before the triple bottom appeared. Even though the stock climbed from his $14 purchase price nearly a year before, seeing the triple bottom thrilled him. He believed that the formation would act as a consolidation of the upward trend. He was right. A day after the stock pierced the confirmation line, he bought more, receiving a fill at 27. His analysis suggested prices would rise to 30.25, fulfilling the measure rule. Russell believed the stock could do better and secretly hoped for more.

After the purchase he waited. As the stock climbed, he logged into his broker at the end of the trading session each day and plotted the daily price change. Over time, he was able to draw an up trend line that skirted the daily lows as the price ascended (see Figure 50.4).

He drew a second trend line from the third bottom low upward (not shown). As he extended the two lines, they intersected on July 20. On that day, price closed below both trend lines. Time to sell.

That evening, Russell phoned his broker and placed a market order to sell his holdings in the company the next day. The following day word came that

his shares traded at 30.25. Much to his surprise, he met the measure rule prediction exactly.

He knew that he had done the right thing by selling, since a trend line penetration is not something to take lightly. In this instance, however, he was wrong. The stock turned around and continued moving up. Soon, news came that earnings would be 40% above the prior year. This information sent the stock gapping up (breakaway gap), eventually reaching a high of 39.38. Four months after reaching the high, the stock was trading at 16.13.

Russell left a lot on the table getting out at 30 and watching the stock coast to 40, but the feel of green in his pocket was a whole lot better than riding the stock down to 16.

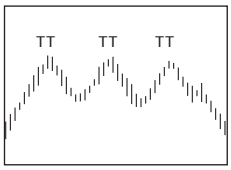
For Best Performance

The following list includes tips and observations for selecting triple bottoms that perform well. Consult the associated table for more information. Also if the triple bottom has a down-sloping trend line, buy the pattern when price closes above the trend line. The trend line is a line connecting the two highest peaks between the three valleys. When it slopes downward, you can usually buy in at a lower price than waiting for normal confirmation.

- Use the identification guidelines to help select the pattern—Table 50.1.
- Trade triple bottoms in a bull market—Table 50.2.
- Trade busted patterns, when price rises 5% then drops dramatically—Table 50.2.
- In a bear market, expect a short, steep rise—Table 50.2.
- Patterns in a bull market have lower failure rates—Table 50.3.
- Avoid triple bottoms with overhead resistance; they may throw back—Table 50.4.
- If price weakens a month after the trade, consider selling—Table 50.5.
- Select patterns that are both short and narrow—Table 50.6.
- Patterns with dome-shaped volume do well in bull markets; U-shaped do well in bear markets—Table 50.7.
- In a bull market, trade triple bottoms with a higher third valley—Table 50.8.

51

Triple Tops



RESULTS SNAPSHOT

Downward Breakouts

Appearance	Three distinct minor highs at about the same price level	
Reversal or continuation	Short-term bearish reversal	
	Bull Market	**Bear Market**
Performance rank	7 out of 21	12 out of 21
Break-even failure rate	10%	5%
Average decline	19%	24%
Change after trend ends	53%	46%
Volume trend	Downward	Downward
Pullbacks	61%	64%
Percentage meeting price target	40%	51%
Surprising findings	Busted patterns in a bull market rise 63%. Pullbacks hurt performance but gaps help. Tall or narrow patterns perform better than short or wide ones. Triple tops with U-shaped volume perform best. When volume surrounding the last peak is below the center peak, the triple top does well.	
See also	Broadening Formations, Right-Angled and Descending; Broadening Tops; Broadening Wedges, Descending; Head-and-Shoulders Tops; Head-and-Shoulders Tops, Complex; Triangles, Ascending	

Triple tops remind me of some mountains in New Mexico or the drumlins in upstate New York. A mountain or hill soars above a flat plain. They look odd because they stand alone. I love those mountains, but triple tops are another matter. As bearish patterns, they predict a price downturn and that is never a good omen for traders holding the stock.

The low failure rate in a bear market (5%) plus the average decline (24%) make triple tops a solid performer. As you might guess, the performance in a bull market suffers.

Surprises are many with this pattern, but I am sure you can guess what most of them are. Busted patterns perform very well, so if you see a confirmed triple top with price that drops less than 5%, buy it. The taste of an average 63% rise is positively mouthwatering in such situations. Another unusual surprise is when weak volume surrounds the last peak. For some reason, that occurrence predicts a larger decline. Since the statistics are averages, your results will vary, so be sure to use stops and prudent money management.

Tour

Figure 51.1 shows a triple top on the daily scale. The pattern reminds me of a roller coaster as prices climb the first hill. Then it is over the top to glide down the slope and up to the next high and over the third one as well. After the final high, prices decline for the intermediate term pausing at the confirmation line while deciding which route to take.

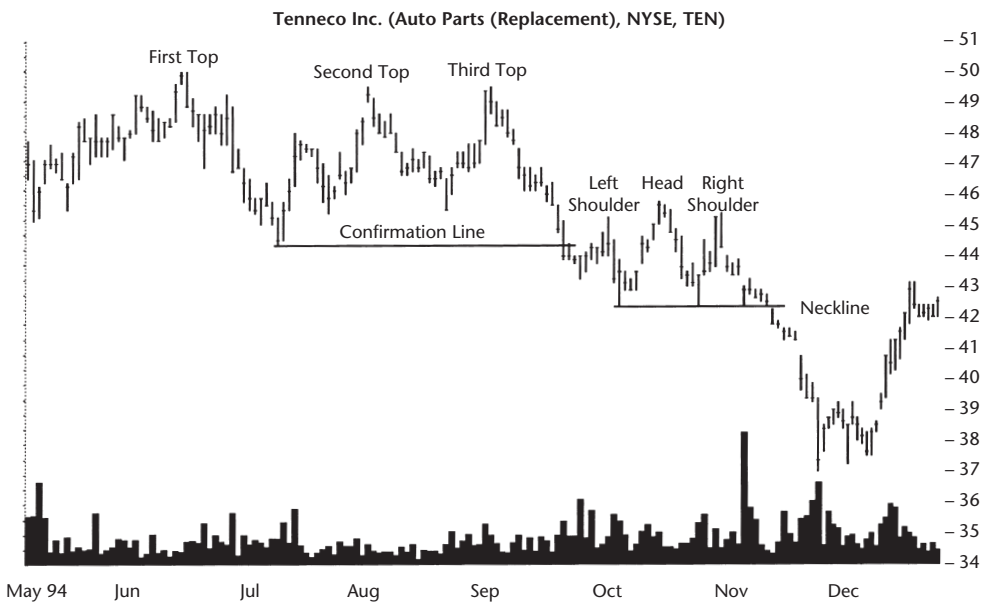


Figure 51.1 A triple top has three peaks and a pullback usually follows. A head-and-shoulders top forms at the confirmation point signaling further weakness.

A head-and-shoulders top forms, warning investors of further declines. Prices pull back to the triple top confirmation line, forming the left shoulder, peak at the head, and rise to form the right shoulder. Price piercing the neckline seals the fate of the stock. Price tumbles in a straight-line fashion until reaching a low of 37, a decline from the triple top high of 50.

The three peaks of the triple top form at about 50 and have two valleys between them. The lowest valley low marks the confirmation point, the level to which prices must decline to confirm the validity of the formation. After confirmation, prices usually pull back to the confirmation point before stumbling.

Identification Guidelines

Table 51.1 outlines identification guidelines for triple tops.

Three large distinct tops. When searching for a triple top or verifying that the three bumps on a price chart belong to the formation, look at the highest high in each peak. The peaks should be near one another in price. A center peak that towers above the other two suggests the pattern is a head-and-shoulders top. When the tops consistently inch upward, the activity suggests a broadening top. While looking at the three peaks, do not ignore the lows. The formation may be a right-angled descending broadening top or even a descending broadening wedge if the three peaks are moving down slightly in price.

Table 51.1
Identification Characteristics

Characteristic	Discussion
Three large distinct tops	Look for three minor highs, well separated and distinct. The tall peaks are often sharp spikes that contrast with more rounding-appearing valleys.
Same price	The price variation among the three tops is minor. The center top should not be significantly above the other two, otherwise it is a head-and-shoulders top. There is a tendency for smaller triple tops to be one of the broadening family of chart patterns, especially the right-angle variety, so pay attention to the price lows, too.
Downward volume trend	The volume trend is usually downward but may be hard to read. Often the volume pattern is flat except near each of the three peaks. The first peak often has the highest volume.
Confirmation point	Prices must decline below the lowest low in the formation (the confirmation point) or it is not a triple top. An upsloping trend line drawn connecting the valley lows can also serve as confirmation.
Weekly chart	Since triple tops are usually large price formations, look at the weekly chart to help identify the longer variety.

In the case of a right-angled broadening top, you can probably make money on the triple top formation even before the broadening top breaks out. At least with a broadening formation, you can anticipate when it will be time to close out your position (do so when prices approach the lower, down-sloping, trend line).

Same price. The three peaks in a triple top usually are sharp and pointed looking, with rounded-appearing valleys in between. There are wide variations in this pattern, so do not be too critical. Make sure the three well-separated peaks are not part of the same congestion pattern. Each top should be a part of its own minor high, a distinct peak that towers above the surrounding price landscape. The price difference between the three peaks is usually minor, with the center peak often below the other two. A large price variation should exclude the pattern from consideration.

Downward volume trend. The overall volume trend is usually downward and lackluster, but varies from formation to formation. Volume on the three peaks, especially the first one, is higher than in the valleys.

Confirmation point. The three-bump pattern confirms as a triple top when price closes below the lowest low in the pattern. Without confirmation, you do not have a triple top and price is likely to continue rising. Alternatively, an up-sloping trend line drawn across the bottoms of the two valleys can also serve as confirmation. Often, this approach will allow you to enter a trade sooner.

To see what a triple top looks like, examine Figure 51.2. The three peaks are pointed, well separated, and distinct. The three minor highs are obvious and that is important in any formation. If other investors do not recognize a chart pattern for what it is, they will not try to take advantage of it. If they do not buy or sell appropriately, the pattern will fail. Chart patterns are a self-fulfilling prophecy that depend on the crowd behaving the same way.

All three peaks are at about the same price level with the center peak a bit recessed from the other two. This feature is common as quite a number (25%) of triple tops have a lower center peak.

The receding volume trend is clear in the figure with the first peak witnessing the highest volume of the three.

An interesting development in this formation is a trend line drawn below the lows (not shown but it connects points A and B on the chart). With another trend line drawn horizontally across the three tops, the formation takes on the appearance of a right-angled descending broadening top. In many triple tops, the broadening formation also appears. This occurrence does not diminish the validity of the triple top; it just makes both formations easier to trade (because you can buy or sell at the trend lines and take advantage of partial rises or declines).

Weekly chart. The larger triple tops appear on the weekly scale, and Figure 51.3 shows an example. Even though the average triple top sports a 19% to 24% decline, price occasionally falls much farther. As you can see in the chart, the triple top marks the peak in the stock. From the high of 32.94, the stock plummets to 4.75, a stomach-churning decline of 86% in 2 years.

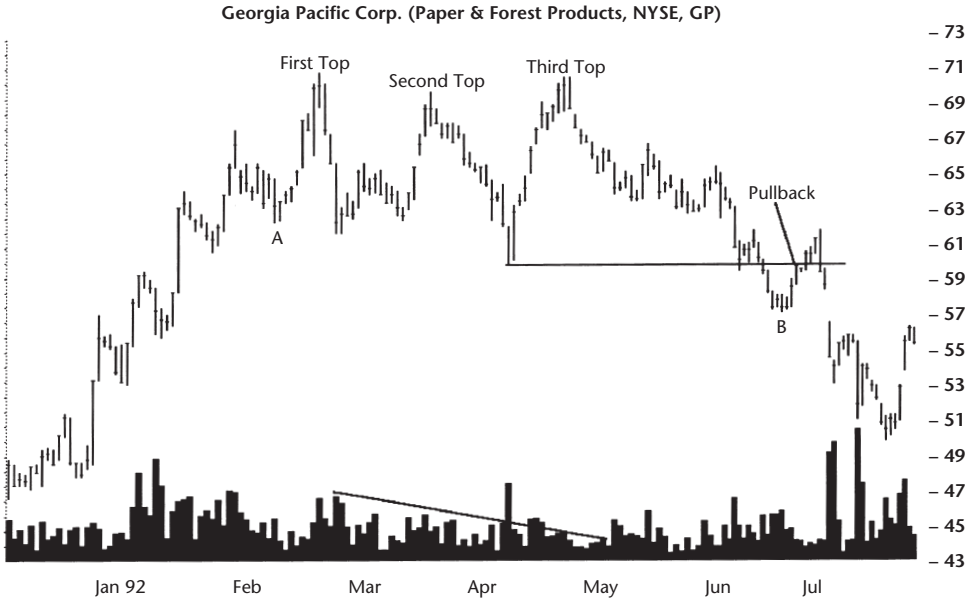


Figure 51.2 This triple top shows three distinct widely spaced tops at nearly the same price level.

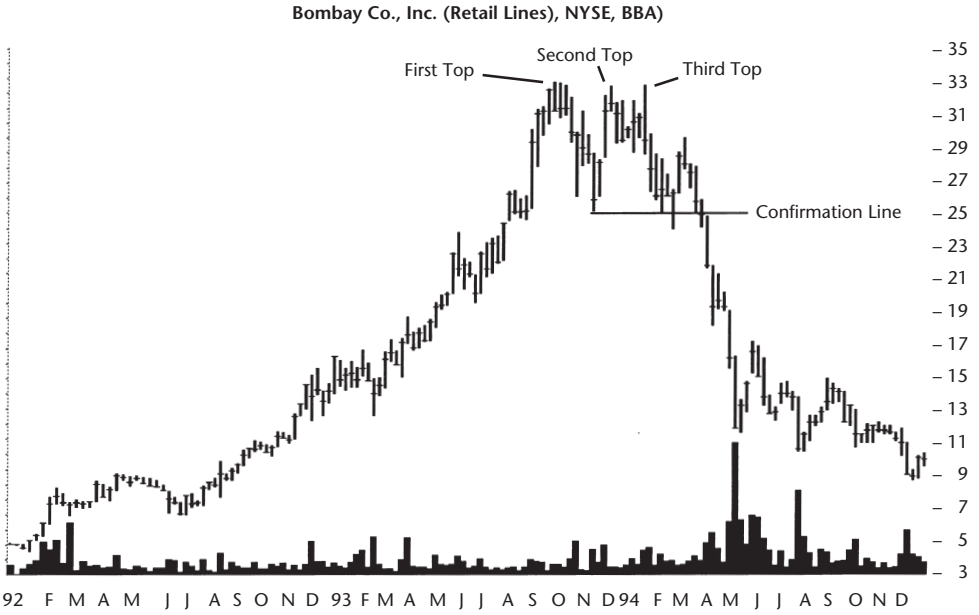


Figure 51.3 Triple top reversal on the weekly scale. The triple top marks the high point for the stock.

The chart also suggests some lessons. Sometimes the buy-and-hold strategy does not work. Whether you sold a bit early or a bit late, anything would have been better than riding the stock all the way up and all the way back down. Do not laugh; I have done it myself, but not with this stock. It is probably a mistake we all have made at one time or another and hope never to make again. Unless you use stops, you will probably make it again. You will watch all your profits evaporate as a stock declines while you continue hoping it will turn around. Then, just after you get disgusted enough to sell, prices bottom and start recovering.

Focus on Failures

The failure rate of triple tops at 10% is comfortably below the 20% maximum that I consider reliable formations to maintain. I classify a failure of a triple top to be when price reaches the confirmation point and continues moving down by less than 5% before turning around and heading meaningfully higher. This is a key point. Prices must decline to the confirmation point, the lowest low reached in the formation. If prices do not decline to that level, then the three-bump formation *is not a triple top*—it is just a collection of minor highs (or, perhaps, some other formation).

Figure 51.4 shows a typical example of a 5% failure. The three tops are distinct minor highs that form after a 2-month spurt upward. It is not surprising

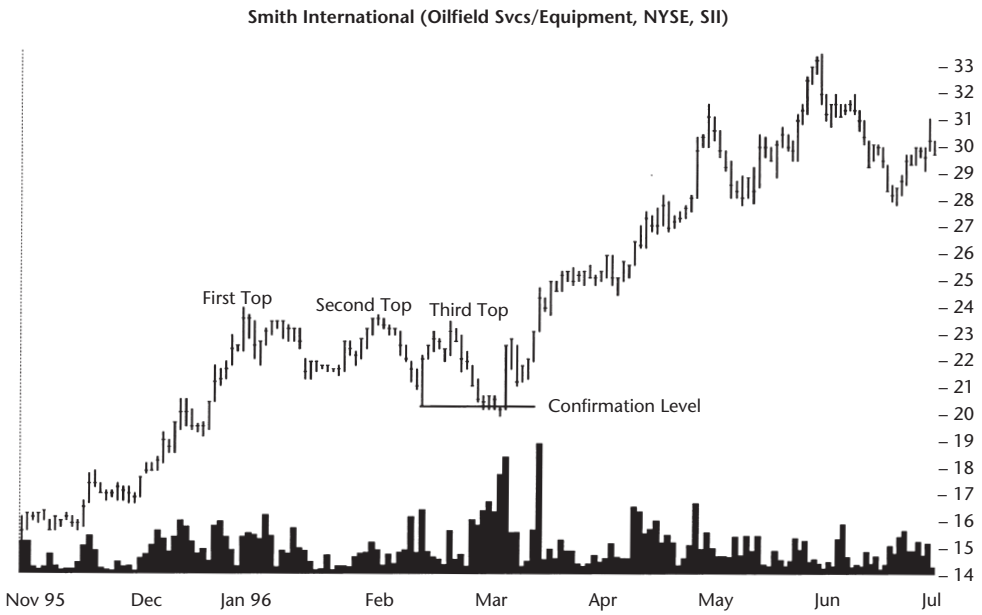


Figure 51.4 This is an example of a 5% failure where prices fail to continue moving down by more than 5% before turning around. Strong industry trends were instrumental in turning around the stock.

that the stock needs a rest and decides to retrace some of its gains—a common occurrence. From the high, the stock backtracks about four points before moving up again. The lowest low is just a smidgen below the confirmation point, which validates the formation, before prices begin climbing again.

Had you sold this stock short at the confirmation point of 20.25, you should have covered your trade once prices climbed above the highest high in the formation, in this case, 23.88. This tactic would have kept losses to a rather large 18%, but that is certainly better than hoping for a decline while watching it rise to 33!

Sometimes, it is difficult to determine exactly why a stock fails to perform as expected. Often fundamentals are the key. In this case, the oil-field services sector was improving due to an increase in exploration activity and deep water drilling. In late January, the Federal Reserve cut two key interest rates by 0.25% giving hope that the health of the overall economy would improve.

On the technical front, if you draw trend lines along the three tops and the minor lows, the formation takes on the appearance of a descending broadening wedge since the three tops are at consecutively lower prices. With the wedge, it is difficult to predict in which direction the breakout will occur. The fundamentals suggest the breakout will be upward, and that is exactly what happens. The formation serves as a resting place for the stock as it gathers strength for the next up leg.

One could view the formation as the corrective phase of a measured move up formation. The price prediction of the measured move fulfills quickly when prices climb to 28.88 in late April.

Statistics

Table 51.2 shows general statistics for the triple top chart pattern.

Table 51.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	278	349
Reversal (R), continuation (C)	245 R, 33 C	305 R, 44 C
R/C performance	–19% R, –19% C	–23% R, –25% C
Average decline	19%	24%
Declines over 45%	11 or 4%	23 or 7%
Change after trend ends	53%	46%
Busted pattern performance	63%	33%
Standard & Poor's 500 change	1%	–15%
Days to ultimate low	60	42

Note: Minus sign means decline.

Number of formations. I used 500 stocks from mid-1991 to 1996 as the bull market proxy and 500 stocks from 2000 to 2003 plus additional samples between those dates. I uncovered 627 triple tops.

Reversal or continuation. Since we are dealing with tops, most of the chart patterns acted as reversals of the uptrend. However, I found almost 100 that formed as a congestion area in a falling price trend. Those I call continuations because price continues lower after the breakout.

The performance difference between continuations and reversals is slight, 25% versus 23% in a bear market. A bull market shows no performance difference. Still, if you see a triple top forming in a downtrend, that will be the one to consider shorting.

Average decline. The average decline in a bear market is 24%, slightly ahead of the 19% decline in a bull market.

Declines over 45%. Bearish chart patterns never perform well in this category and the results speak for themselves. Just 7% of the bear market patterns decline more than 45% after the breakout.

Change after trend ends. Once price reaches the ultimate low, it soars between 46% and 53%. That gain may sound huge, and I often wish for such results, but it pales in comparison to other patterns that show recoveries of 60% or more.

Busted pattern performance. If you find a triple top in which price drops less than 5% before shooting upward, buy it. Chances are the rise is going to be an exceptional one. In a bull market, the rise averages 63%, but that observation comes from just 18 samples. In all likelihood, the results will shrink like cotton socks in hot water as more samples become available.

Standard & Poor's 500 change. If you compare the average decline (19%, 24%) with the market change from the breakout to the ultimate low (1%, –15%), you can see the market influence on triple top performance. A bear market helps stocks decline. This finding suggests that you short a stock in a bear market or sell a long holding before the cleaners find you.

Days to ultimate low. In a bull market, it takes about 2 months to reach the ultimate low and about 1.5 months in a bear market. Comparing the average decline in both markets, the slope of the decline must be steeper in a bear market than in a bull one. This finding emphasizes the need for stops. Without a stop, if you are not careful, your loss can grow to huge proportions quickly.

Table 51.3 shows failure rates for triple tops. Clearly, the bear market numbers are lower than the bull market ones. For example, 5% of the triple tops I looked at in a bear market failed to decline at least 5%. Almost half, 46%, failed to drop at least 20%. In a bull market, the result is even worse with 63% failing to drop at least 20%.

The table suggests you trade this pattern in a bear market. That is the time to consider shorting a stock. If you own a stock, and a confirmed triple top appears, sell it. You can always buy back into the stock once it bounces off the bottom, 20% below where it is selling now.

Table 51.3
Failure Rates

Maximum Price Decline (%)	Bull Market	Bear Market
5 (breakeven)	29 or 10%	19 or 5%
10	81 or 29%	60 or 17%
15	137 or 49%	109 or 31%
20	174 or 63%	162 or 46%
25	208 or 75%	208 or 60%
30	229 or 82%	243 or 70%
35	249 or 90%	283 or 81%
50	272 or 98%	328 or 94%
75	278 or 100%	349 or 100%
Over 75	278 or 100%	349 or 100%

Table 51.3 also says not to expect a large decline. Just 6% of the stocks in a bear market see their price cut in half (94% fail to drop 50%).

Table 51.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. It takes about a month for price to decline from the last peak to the confirmation price—the lowest low in the pattern.

Yearly position. Most triple tops have breakouts that appear in the middle of the yearly price range. The breakout, being at the bottom of the pattern, explains why few appear within a third of the yearly high.

Table 51.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	37 days	29 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L40%, C45%, H16%	L38%, C43%, H20%
Percentage decline for each 12-month lookback period	L18%, C19%, H21%	L24%, C24%, H23%
Pullbacks	61%	64%
Average time to pullback ends	10 days	12 days
Average decline for patterns with pullback	18%	23%
Average decline for patterns without pullback	21%	25%
Performance with breakout day gap	–21%[a]	–24%
Performance without breakout day gap	–19%	–23%
Average gap size	$0.85	$1.76

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Yearly position, performance. In a bull market, the best performance comes from triple tops with breakouts near the yearly high. In a bear market, the worst performance comes from the same range.

Pullbacks. Pullbacks occur in almost two out of three patterns, and price takes about 11 days to return to the breakout price. When a pullback occurs, performance suffers. For example, in a bull market prices decline 18% after the breakout when a pullback is present. Without a pullback, the decline measures 21%.

Gaps. Gaps that occur on the breakout day tend to send prices down farther than breakouts without gaps. Look at the gap size: $0.85 in a bull market and double that, $1.76, in a bear market. That is huge! The bad news is that you must have a position in the stock before the gap in order to participate fully in the decline.

Table 51.5 shows a frequency distribution of time to the ultimate low. The first week sees the most triple tops bottom out, about 25%. In a bear market, half will reach the ultimate low by week 3. Thus, if you short a stock showing a triple top, expect a quick but sharp decline. At the other end of the table, almost a third (29%) of the triple tops in a bull market are still searching for the ultimate low after 2.5 months.

Notice the slight rise during week 7 (49 days) in a bull market. Eight percent of the patterns reach the ultimate low then, about double the surrounding weeks. If you see price showing signs of turning up 1.5 months into the trade, then close out your short position.

Table 51.6 shows size statistics.

Height. Tall patterns perform better than short ones, but the results are closer than I expected.

Width. Narrow patterns beat wide ones, but, again, the numbers are close. I use the median length to separate wide patterns from narrow ones.

Average formation length. The average triple top is 2 months long in a bear market and 3 months long in a bull market. The difference may be that I picked smaller triple tops in a bear market than in a bull one. (I selected many of the bull market patterns a number of years ago for the first edition of this *Encyclopedia*.)

Height and width combinations. The best performing combination of height and width comes from triple tops that are both tall and narrow. Avoid short and wide patterns as they perform worst.

Table 51.5
Frequency Distribution of Days to Ultimate Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	25%	15%	10%	7%	6%	5%	4%	4%	3%	2%	19%
Bull market	24%	10%	7%	6%	3%	4%	8%	4%	2%	3%	29%

Table 51.6
Size Statistics

Description	Bull Market	Bear Market
Tall pattern performance	–20%	–24%
Short pattern performance	–19%	–23%
Median height as a percentage of breakout price	19.44%	19.41%
Narrow pattern performance	–20%	–24%
Wide pattern performance	–18%	–23%
Median length	75 days	50 days
Average formation length	95 days	66 days
Short and narrow performance	–19%	–24%
Short and wide performance	–17%	–20%
Tall and wide performance	–19%	–24%
Tall and narrow performance	–23%	–24%

Note: Minus sign means decline.

Table 51.7 shows volume statistics for triple tops.

Volume trend. If volume is any gauge, bull and bear markets act differently. In a bull market, triple tops with rising volume perform better than do those with falling volume. In a bear market, the results flip, with patterns showing falling volume outperforming.

Table 51.7
Volume Statistics

Description	Bull Market	Bear Market
Rising volume trend performance	–21%	–22%
Falling volume trend performance	–18%	–25%
U-shaped volume pattern performance	–21%	–25%
Dome-shaped volume pattern performance	–18%	–22%
Neither U-shaped nor dome-shaped volume pattern performance	–20%	–24%
Heavy breakout volume performance	–19%	–24%
Light breakout volume performance	–20%	–23%
Average decline when top 3 volume is above top 2	18%	23%
Average decline when top 3 volume is below top 2	20%	24%

Note: Minus sign means decline.

Table 51.8
Miscellaneous Statistics

Description	Bull Market	Bear Market
Average decline when top 3 is above top 2	18%	24%
Average decline when top 3 is equal to top 2	24%	20%[a]
Average decline when top 3 is below top 2	20%	23%

[a]Fewer than 30 samples.

Volume shapes. Triple tops with U-shaped volume tend to do well after the breakout. Avoid trading triple tops with dome-shaped volume. They perform worst.

Breakout volume. Light breakout volume helps triple tops perform in a bull market and hurts them in bear markets, but the performance difference is slight.

Average decline. Comparing the 5-day volume surrounding the last two tops, we find that when volume on the last top is below the middle one, performance improves. The numbers are close, though, so do not expect much of a difference.

Table 51.8 shows postbreakout performance when comparing the price level of the middle and last tops. In a bull market, when the two tops are at the same price, the triple top tends to show larger declines. In a bear market, that combination results in the worst performance, but samples are few. The best bear market performance comes when the last top has a higher price than the middle one. The decline averages 24%, but this percentage matches the results for *all* bear market triple tops.

Trading Tactics

Table 51.9 outlines trading tactics for triple tops.

Measure rule. Use the measure rule to help gauge how far price will decline. Begin with computing the height of the formation by subtracting the lowest low from the highest high reached in the chart pattern. Subtract the difference from the lowest low to arrive at the predicted price. The predicted price serves as the expected minimum move. Unfortunately, the measure rule for triple tops works only between 40% (bull market) and 51% (bear market) of the time, meaning that prices usually fall short of their targets.

Figure 51.5 makes the computation more clear. The lowest low of the formation occurs in late December when prices touch 17.75 briefly. The last peak harbors the highest high, 23.38. The difference, 5.63, is the formation height. Subtract the height from the lowest low to arrive at a target price

Table 51.9
Trading Tactics

Trading Tactic	Explanation
Measure rule	Compute the formation height by subtracting the lowest low from highest high in the formation. Subtract the height from the lowest low. The result is the expected minimum price move.
Wait for confirmation	Since prices after most three-top formations continue moving up, always wait for prices to close below the lowest low reached in the formation (the confirmation point). Once confirmed, prices usually continue moving lower.
Trade the trend line	Draw a trend line connecting the two valleys. If the line slopes upward, the pattern confirms when price closes below the line. Trade after pattern confirmation.
Wait for pullback	The vast majority of triple top formations have pullbacks, so if you miss the breakout, place or add to your short position once prices begin heading back down after the pullback.
Stop loss	For short positions, place a stop-loss order $0.10 above the nearest high.

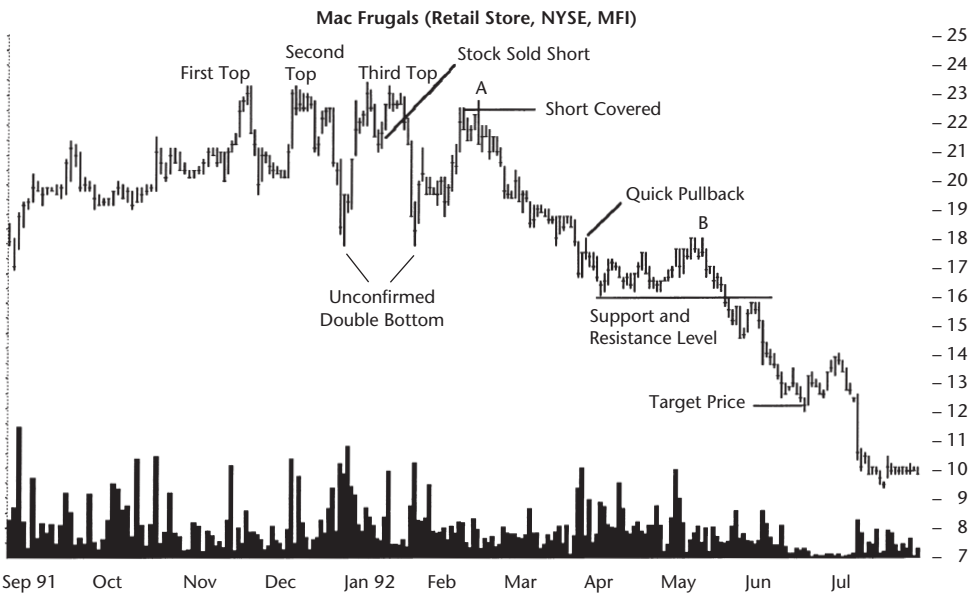


Figure 51.5 Triple top with unconfirmed double bottom. As described in the Sample Trade, Danielle sold this stock before it reached the confirmation point and then panicked at the unconfirmed double bottom. The stock eventually declined 56%. A descending scallop appears between points A and B.

of 12.12 (that is, 17.75–5.63). The figure shows price reaching the target in mid-June.

To better gauge the veracity of the result, you might look at the predicted decline in percentage terms. From the confirmation point (the lowest low) of 17.75, a 5.63 point decline is a loss of 32%. Table 51.3 indicates that less than 18% of the formations have losses over 30%. Those are terrible odds.

In such a situation, and in most cases, you should look at support levels. Prices indicate support when they decline to a level and then rebound. For example, the stock paused at $16 during July and August 1991 (not shown in Figure 51.5). This pause created the support level where the stock again paused during April. Eventually, the stock worked through the support and tumbled to a lower support level.

Wait for confirmation. In a roaring bull market, triple tops are often deceiving. Three price bumps appear and price does not decline to the confirmation point before soaring. Thus, an important guideline in using triple tops is to wait for prices to close below the confirmation point.

Trade the trend line. Draw the trend line connecting the two valleys. If this trend line slopes upward, a trade signals when price closes below it. This method will often get you in sooner than waiting for price to close below the lowest low.

Wait for pullback. Pullbacks occur over 60% of the time, so if you miss the original breakout, you can often place your trade during the pullback. Figure 51.5 shows a quick pullback occurring just 2 days after the breakout (I define a breakout as being when price closes below the confirmation point). Just over a month later, investors have other opportunities (because price rises to the breakout point) to add to their position before the decline really begins.

Stop loss. Should the trade go against you, place a stop-loss order $0.10 above the nearest high. Since the three tops establish a resistance zone, prices will not hit the stop order until the resistance burns through. Sometimes a fourth peak will appear before prices move down.

Sample Trade

Danielle is in charge of the family finances. To boost the return on their savings, she has taken to playing the stock market. Her first few trades were tentative but profitable. That gave her enough courage to undertake the trade featured in Figure 51.5.

She is a brilliant, anxious, high-energy person who is comfortable taking more risks than most people, so it came as no surprise when she jumped the gun and sold the stock short in early January. She wanted to maximize her gains and once prices were clearly heading down, she placed the trade and received a fill at 21.50.

The day after she shorted, the stock turned around and headed back up, making a fourth peak. Instead of covering her loss, she decided to hang on. It was a good call as prices flipped around and headed back down. Seven days later they reached the confirmation point of 17.75 but stalled.

To Danielle, it looked as though the triple top became a multiple top and later developed into an unconfirmed double bottom. Each day as prices climbed and her gains dwindled, she became more nervous holding onto her short position.

Eventually, fear overcame greed and she covered her position at 22.25, suffering a minor loss of less than a point. A week or so after she bailed out, the stock was lower and it kept moving down. Eventually, the stock bottomed out at 9.38, comfortably below the predicted price and well below her entry point at 21.50.

Danielle made two mistakes with this trade. First she did not wait for price to close below the confirmation point. Had she waited, she would have seen the false double bottom (it never confirmed as a true double bottom because price did not close above the highest high between the two bottoms).

Furthermore, she was not patient enough for the trade to work out. When a trade goes against you, most times it is wise to quickly close out a position, especially if it is a short sale where losses can be unlimited. However, there are times, such as this trade, where a bit of patience is necessary along with a properly placed stop. Since the three peaks represent a resistance zone, it is wise to place a stop just above the highest high and then wait for price to hit it. Had Danielle waited, the trade would have worked out better than her analysis predicted.

For Best Performance

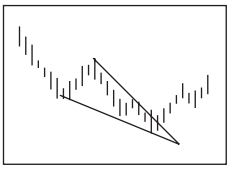
The following list includes tips and observations to help select triple tops that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 51.1.
- Short triple tops in a bear market—Table 51.2.
- The decline in a bear market is steeper and shorter than in a bull market, so trade accordingly—Table 51.2.
- Trade busted patterns in a bull market—Table 51.2.
- Select triple tops in a bear market because they have lower failure rates—Table 51.3.
- Look for underlying support to avoid a pullback; pullbacks hurt performance—Table 51.4.
- Breakout day gaps help performance—Table 51.4.

- A quarter of the patterns bottom in the first week, so be prepared to cover a short quickly—Table 51.5.
- Select tall or narrow patterns; avoid short and wide ones—Table 51.6.
- Trade triple tops with U-shaped volume; avoid those with a dome shape—Table 51.7.
- Pick triple tops with volume surrounding the last peak below the middle peak—Table 51.7.
- In a bull market, select triple tops with the last peak at the same price as the middle one. In a bear market, look for the last top to be higher than the middle one—Table 51.8.

52

Wedges, Falling



RESULTS SNAPSHOT

Upward Breakouts

Appearance	A downward price spiral bounded by two intersecting, down-sloping trend lines
Reversal or continuation	Short-term bullish reversal or continuation

	Bull Market	**Bear Market**
Performance rank	20 out of 23	11 out of 19
Break-even failure rate	11%	11%
Average rise	32%	26%
Change after trend ends	–28%	–33%
Volume trend	Downward	Downward
Throwbacks	56%	61%
Percentage meeting price target	70%	60%

Surprising findings	Busted patterns perform well. Throwbacks hurt performance. Tall patterns perform better than short ones. Wedges with random volume shapes do well.
Synonyms	Descending wedges
See also	Pennants

Downward Breakouts

Appearance	Same, but breakout is downward.
Reversal or continuation	Short-term bearish continuation

	Bull Market	Bear Market
Performance rank	17 out of 21	7 out of 21
Break-even failure rate	15%	6%
Average decline	15%	24%
Change after trend ends	51%	52%
Volume trend	Downward	Downward
Pullbacks	69%	72%
Percentage meeting price target	30%	36%
Surprising findings	Wedges that act as reversals of the price trend perform better than continuations. Tall or wide patterns perform better than short or narrow ones.	
Synonyms	Same as for upward breakouts	
See also	Same as for upward breakouts	

The Results Snapshot shows the important numbers for falling wedges. When compared to other chart patterns, the failure rate is a bit high except for downward breakouts in a bear market. The average rise or decline is also unexciting. Coupled with their rare appearance and the difficulty in spotting these patterns in the bush, falling wedges are beasts you probably will not want to trade. Still, they can come in as handy as metric wrenches.

Concerning surprises, the lineup shows the typical suspects. I found an unusually high number of wedges with a random volume shape. They tended to perform well when the breakout was upward. Busted patterns also performed well, but the sample size was small, leading me to question the results.

Finally, I did a frequency distribution of the breakout distance to the wedge apex and found that the best performers in a bull market had upward breakouts 55% to 80% of the way to the apex, with rises averaging 37%. Remember that even though a falling wedge may have a breakout 60% of the way to the apex, that does not mean you will see a 37% rise. Since we are dealing with probabilities, anything can happen, but the statistics suggest a more powerful move.

The percentage meeting the price target (that is, the measure rule) for upward breakouts uses the highest high in the wedge for the target—an easy objective. For downward breakouts, I use the formation height subtracted from the breakout price. That method is why downward breakouts rarely hit their targets but upward breakouts do better.

Tour

Figure 52.1 shows a falling wedge. Prices tagged a new low in late July and bounced upward. The upward momentum did not carry quite as far as before.

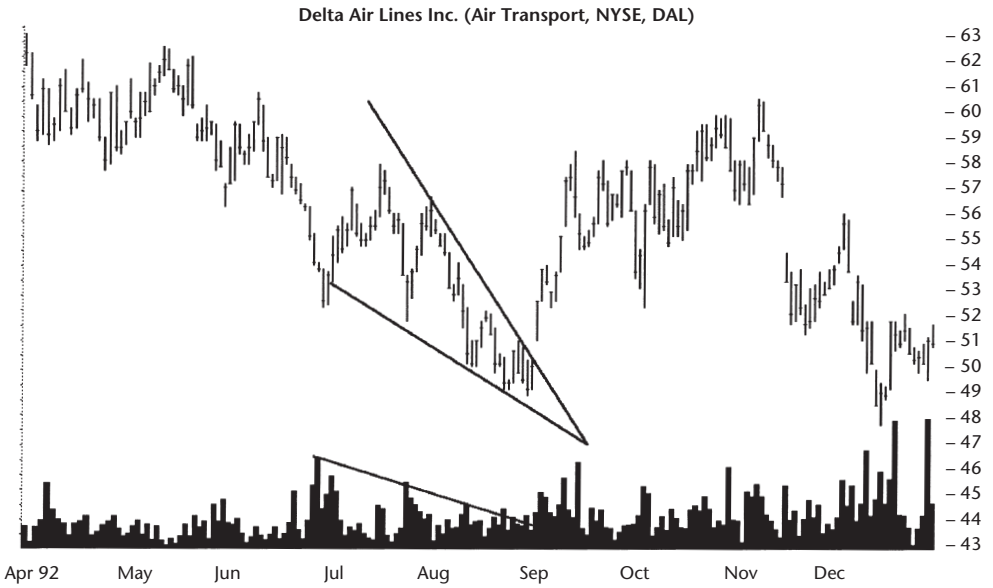


Figure 52.1 A falling wedge bounded by two down-sloping trend lines.

Another up and down oscillation occurred during mid-August just before prices finally reached a new low.

If you draw a trend line along the bottom of the minor lows and another along the tops, you see the familiar shape of a falling wedge. Falling wedges are rare formations that have price movements bounded by two down-sloping and converging trend lines. When drawn on the chart, the picture looks like a wedge tilted downward.

Once prices break out upward, they rise and quickly climb above the top of the formation. Many times prices continue moving up.

Identification Guidelines

Table 52.1 shows identification guidelines, of which there are few.

Two down-sloping trend lines. As mentioned before, two trend lines outline the price action. Both trend lines slope downward, with the top trend line having a steeper slope than the bottom one. Eventually, the two trend lines intersect at the wedge apex. You can see this in the wedge pictured in Figure 52.2. This wedge forms as part of a consolidation pattern in an uptrend. Prices oscillate from one trend line to the other several times before breaking out of the narrowing price pattern in mid-June.

Multiple touches. I usually regard five touches as the minimum necessary to safeguard a good formation. The reason for the multiple touches is that the price pattern creates several minor highs and minor lows, each succeeding one narrower than the last. Having a five-touch minimum prevents a price pattern that resembles a rise and gradual decline from being labeled as a wedge.

Table 52.1
Identification Characteristics

Characteristic	Discussion
Two down-sloping trend lines	Draw two trend lines, one along the tops and one along the bottoms. The trend lines must both slope downward and eventually intersect.
Multiple touches	Most formations have at least five touches, three along one side and two along the other. Be skeptical of formations with fewer than five touches.
Three-week minimum	A falling wedge has a minimum duration of 3 weeks. Anything less is probably a pennant. Formations rarely exceed 4 months long.
Volume trend	Volume usually trends downward until the breakout.

There needs to be several, opposing, touches of the trend line as prices progress through the formation. For example, Figure 52.2 shows six touches of the trend lines, five of which occur on the opposite side of the previous touch.

The minor highs and lows are descending even as they narrow. Down-sloping trend lines outlining the minor highs and lows are another key to correct identification of a falling wedge. Avoid a horizontal or near horizontal bottom trend line as the formation is most likely a descending triangle. For a falling wedge, both trend lines *must* slope downward.

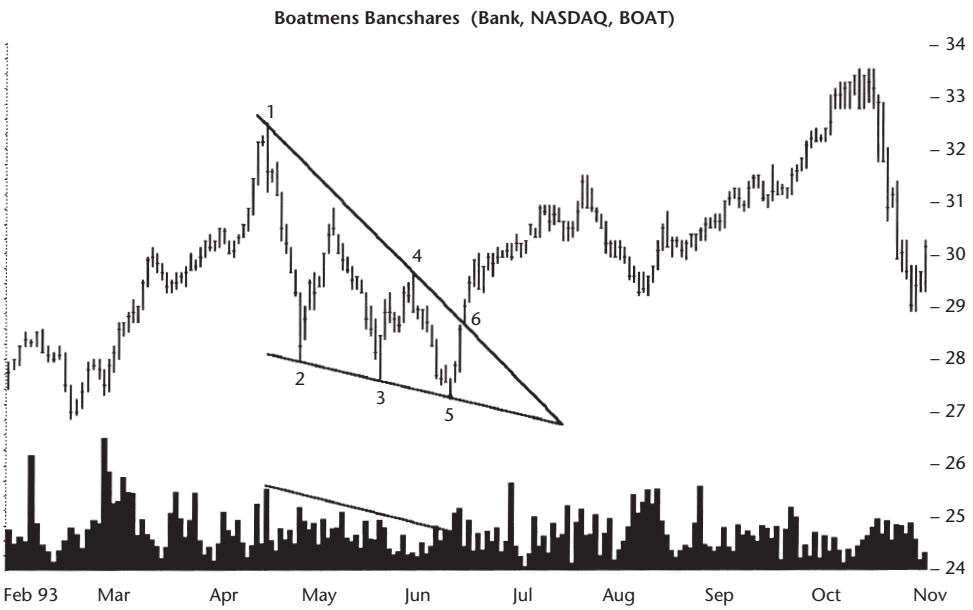


Figure 52.2 A falling wedge with six trend-line touches. Several alternating touches of the trend lines are needed to form a reliable falling wedge.

Three-week minimum. Taken together, the wedge should have a minimum duration of 3 weeks and seldom does it last over 4 or 5 months. The formations in this study, for example, have durations from 3 weeks to 1 year. Durations shorter than 3 weeks are probably pennants.

Volume trend. The volume trend should be downward. This is not an inviolate rule; it is only a guideline that usually rings true. For this study, 7 out of every 10 formations show a downward volume pattern.

Once price pierces the upper trendline, it continues higher. Figure 52.2 shows price staging a breakout in mid-June and reaching the ultimate high in early October. The rise, at 17% from the breakout, is well below the average rise.

Why do falling wedges act as they do? About half of the formations act as consolidations of the prevailing trend. Like the wedge shown in Figure 52.2, prices are heading upward when they run into turbulence. Investors pause from their buying spree and sit on the sidelines. Price retraces its rise by creating the wedge, oscillating in ever-narrowing spirals, until the buying enthusiasm resumes. Volume shows this lack of enthusiasm as it recedes. When buying momentum resumes, price and volume shoot upward again after the breakout.

Think of a falling wedge not as a pattern of weakness, but one of strength, a spring winding tighter and tighter. As a spring tightens, it shrinks, and so do price and volume in the falling wedge. During a breakout, the pent-up force releases, and price bursts through the formation boundary and zooms upward.

Focus on Failures

Like many formations, falling wedges suffer from 5% failures (see Figure 52.3). The falling wedge acts as a reversal of the upward trend. Although not shown on the chart, price began rising in early December 1994. During creation of the chart pattern, price moved lower in a narrowing channel. After the breakout, price climbed and reach a high of 45.38, less than 5% above the breakout price of 43.25. From the high, price headed down and reached the ultimate low in late October at a price of 36.38. The inability of price to continue rising more than 5% after the breakout constituted a 5% failure.

The causes of 5% failures can be many. Overhead resistance, as in this case, blocked the upward rise, so be sure to check for resistance before trading. For downward breakouts, look for nearby underlying support that may halt a decline.

Other causes may include a sharp drop in the stock market—that can keep an industry down for months (think of airline stocks after the tragedy of September 11, 2001). Certainly, a switch from a bull market to a bear market will tend to keep high-flying stocks cruising at a lower altitude, but even a short decline in the market can cause havoc.

Rising commodity prices affect the stock market, too. For example, natural gas and oil prices affect airlines, chemicals, utilities, oil companies, oil service companies, refiners, and so on. The Federal Reserve raising interest

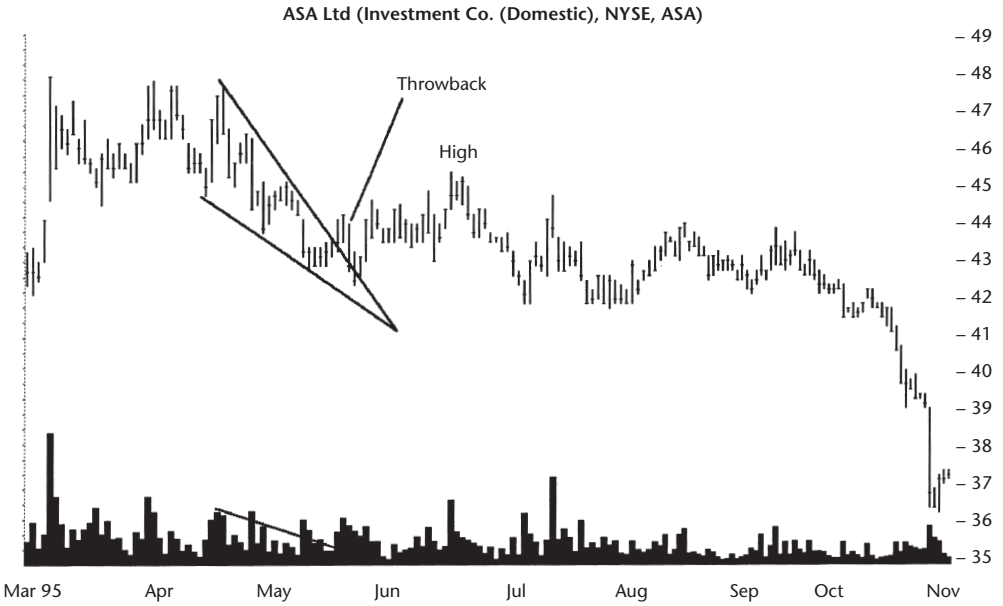


Figure 52.3 An example of a falling wedge 5% failure. Price does not move more than 5% above the breakout point before heading down again.

rates to slow the economy may push it into a recession. The prospect of rising rates is never a good omen for stocks.

What happens after you buy the stock is irrelevant. What is important is how you handle it. Do you cash out quickly, savoring a short-term profit? Do you hold on for the long term and weather the loss? The answer to these questions you should know before trading. Switching your attitude to a long-term holding as price drops in a short-term trade is a game best left to the amateurs. They are the ones that ride a position down and sell just before it bottoms.

Statistics

Table 52.2 shows general statistics for falling wedges.

Number of formations. I searched 500 stocks from mid-1991 to mid-1996 and another 500 with varying durations from 1999 to mid-2004. I included both upward and downward breakouts because I wanted to know how often wedges broke out downward (falling wedges are supposed to go up after the breakout). I found 542, suggesting that wedges are rare considering I looked at 10 years of price data.

Reversal or continuation. Wedges split almost evenly between reversals and continuations of the price trend. Upward breakouts tend to act as reversals, and continuations take a slight lead in downward breakouts. Reversals tend to outperform, though.

Table 52.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	245	126	93	78
Reversal (R), continuation (C)	124 R, 121 C	64 R, 62 C	48 R, 45 C	29 R, 49 C
R/C performance	32% R, 32% C	27% R, 25% C	–15% R, –14% C	–25% R, –23% C
Average rise or decline	32%	26%	–15%	–24%
Rises or declines over 45%	80 or 33%	30 or 24%	1 or 1%	10 or 13%
Change after trend ends	–28%	–33%	53%	52%
Busted pattern performance	38%[a]	52%[a]	–15%[a]	–20%[a]
Standard & Poor's 500 change	8%	–2%	1%	–11%
Days to ultimate high or low	116	77	43	32

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Average rise or decline. The upward breakout numbers are unexciting. In fact, they are below the average rise for many other bullish chart patterns. Downward breakouts only excel in a bear market (24% decline), but that percentage ties the average of all chart pattern types.

Rises or declines over 45%. Upward breakouts do well with 24% and 33% of falling wedges rising more than 45% after the breakout (bear and bull market, respectively). Downward breakouts always have a tougher time declining that far, but bear markets show 13% managing to decline by at least 45%.

Change after trend ends. Once price reaches its ultimate high or low, the price trend reverses. After an upward breakout, price declines between 28% and 33%. After a downward breakout, the rise is a mouthwatering 52% to 53%, on average. Still, that finding is below the 60% we have seen for other chart patterns.

Busted pattern performance. If price moves less than 5% after the breakout, look for price to shoot in the opposite direction. Trade that new direction, especially if the original breakout is downward. The resulting rise of 38% to 52% can be quite profitable.

Standard & Poor's 500 change. Notice the effect the market has on the postbreakout rise or decline. When the market and breakout direction agree, the average rise or decline tends to be larger than the countertrend moves. For example, the market climbed by 8% and prices climbed 32% after a breakout from a falling wedge. In a bear market, the index dropped 2% and wedges having upward breakouts averaged a 26% rise.

Days to ultimate high or low. The rise in a bull market is slower than the decline in a bear market. You can see this feature by comparing the bear market numbers. Upward breakouts take 77 days to rise 26%, but bear markets take 32 days—less than half as long—to drop almost as far, 24%. Thus, bear markets are steeper and reach the ultimate low quicker than bull markets climb to the ultimate high.

Table 52.3 shows failure rates for falling wedges. The best performance comes from wedges in a bear market with downward breakouts. They have the lowest failure rates but only for small moves. Once price moves over 15%, then wedges in the bull market (both breakout directions) outperform.

For example, 50% of the wedges with downward breakouts in a bear market will drop less than 20%, but 44% of the wedges with upward breakouts in a bull market will fail to rise at least 20%. Thus, if you expect a large move, trade wedges in a bull market with upward breakouts because they have lower failure rates.

Here is another way to use Table 52.3. Suppose you find a falling wedge that peaks at 15 and spirals down to 10, where price breaks out upward in a bull market. Since the measure rule says to expect a climb back up to the top of the wedge, what are the chances of that happening? A move from 10 to 15 is 50%, and the table shows that 71% fail to climb that far. Thus, the measure rule is probably wrong, and price is unlikely to reach the top of the pattern before tumbling at least 20%.

Table 52.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. The time from the formation end to the breakout for this pattern is simply a delay imposed by the program I use to draw the patterns. Ignore the numbers. I show them only for completeness.

Table 52.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	27 or 11%	14 or 11%	14 or 15%	5 or 6%
10	57 or 23%	32 or 25%	35 or 38%	16 or 21%
15	88 or 36%	51 or 40%	58 or 62%	27 or 35%
20	109 or 44%	60 or 48%	66 or 71%	39 or 50%
25	124 or 51%	69 or 55%	73 or 78%	48 or 62%
30	133 or 54%	81 or 64%	82 or 88%	54 or 69%
35	147 or 60%	88 or 70%	88 or 95%	58 or 74%
50	173 or 71%	100 or 79%	92 or 99%	71 or 91%
75	203 or 83%	116 or 92%	93 or 100%	78 or 100%
Over 75	245 or 100%	126 or 100%	93 or 100%	78 or 100%

Table 52.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	4 days	3 days	4 days	4 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L45%, C32%, H23%	L51%, C29%, H20%	L56%, C28%, H16%	L59%, C35%, H6%
Percentage rise/decline for each 12-month lookback period	L37%, C30%, H27%	L25%, C31%, H19%[a]	L15%, C16%[a], H11%[a]	L25%, C21%[a], H27%[a]
Throwbacks/pullbacks	56%	61%	69%	72%
Average time to throwback/ pullback ends	10 days	9 days	9 days	8 days
Avrage rise/decline for patterns with throwback/pullback	24%	21%	–15%	–21%
Average rise/decline for patterns without throwback/pullback	43%	36%	–14%[a]	–28%
Performance with breakout gap	39%	23%[a]	–18%[a]	–24%
Performance without breakout gap	31%	27%	–15%	–24%
Average gap size	$0.25	$0.26	$0.54	$0.87
Breakout distance to apex	57%	56%	59%	56%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Yearly position. Most of the time, falling wedges will have their breakouts near the yearly low. Rarely will you see a falling wedge with a breakout near the yearly high.

Yearly position, performance. The numbers for this row have no consistency. The sample sizes are too small to make any definite conclusions, but the middle of the yearly price range seems to work well for countertrend moves (wedges in a bear market, up breakout and bull market, down breakout).

Throwbacks and pullbacks. In all cases but one, throwbacks and pullbacks hurt performance when they occur. The lone holdout is from wedges in a bull market with downward breakouts. They do better after a pullback, but the sample size is small. Before trading, look for overhead resistance and underlying support. The location of those will tell you if the reward outweighs the risk of a trade.

Look at the performance difference between the two rise/decline rows. For example, in a bull market, wedges with throwbacks rise just 24%. Without a throwback, the rise is 43%. Try to pick wedges that are unlikely to throw

back or pull back (that is, they have no nearby overhead resistance or underlying support).

Gaps. Wedges in bull markets do better when a price gap appears on the breakout day. Wedges with upward breakouts in a bear market do better without gaps. A contradiction? Many analysts will tell you that gaps improve performance, but I have found mixed results like those just cited.

The gap size, in the majority of chart patterns, is larger for downward breakouts than upward ones. Why this is the case is unknown, but you should factor that information into your short trade. While it is better to short a stock before the gap, can you still make money shorting after a gap occurs or does the gap represent a large portion of the decline? My personal opinion is that shorting a stock does not yield large gains most of the time, and having a gap chew up some of it even before you trade suggests a more risky approach.

Apex distance. Where the breakout occurs is nearly the same across the table: 56% to 59% of the way to the apex. As I mentioned earlier, the most powerful upward breakouts in a bull market (only) occur between 55% and 80% of the way to the apex. Those falling within that range have rises that average 37%. I did not measure the other variations of market conditions and breakout directions because they rarely occur.

Table 52.5 shows a frequency distribution of time to the ultimate high or low. Notice how quickly prices reach the ultimate high or low. In 2 weeks, over half the wedges with downward breakouts have bottomed. In 3 weeks, 65% of those in a bear market have hit the ultimate low. At the other end of the scale, between a quarter and a third of the wedges with upward breakouts are still looking for the ultimate high after 2.5 months.

These findings suggest two things. First, be prepared to take profits quickly if you short a wedge with a downward breakout. Second, be patient with wedges with upward breakouts. You still need to be careful, but give price room to move up in the usual rise, retrace fashion.

Table 52.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	30%	7%	4%	3%	6%	6%	7%	2%	5%	1%	29%
Bull market, up breakout	20%	9%	7%	7%	4%	3%	3%	4%	4%	2%	36%
Bear market, down breakout	32%	19%	14%	5%	5%	4%	1%	0%	4%	3%	13%
Bull market, down breakout	44%	11%	4%	5%	6%	4%	1%	1%	1%	1%	20%

Table 52.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	41%	34%	15%	25%
Short pattern performance	27%	20%	14%	23%
Median height as a percentage of breakout price	17.75%	21.88%	16.87%	24.22%
Narrow pattern performance	32%	23%	–14%	–22%
Wide pattern performance	32%	29%	–15%	–26%
Median length	36 days	33 days	42 days	40 days
Average formation length	43 days	40 days	49 days	53 days
Short and narrow performance	29%	20%	–13%	–22%[a]
Short and wide performance	24%	21%[a]	–18%[a]	–24%[a]
Tall and wide performance	40%	35%	–14%	–27%[a]
Tall and narrow performance	41%	33%[a]	–17%[a]	–22%[a]

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Table 52.6 shows statistics related to size.

Height. Tall patterns perform better than short ones, regardless of market conditions or breakout directions.

Width. Wide patterns perform equal to or better than narrow ones. This finding would be a blowout if it were not for wedges with upward breakouts in a bull market. They show no performance difference. For reference, I used the median length to determine whether a wedge was narrow or wide.

Average formation length. I used a minimum wedge length of 3 weeks with no upper limit. However, it is rare for wedges to be longer than 4 months. In my study of 542 patterns, the average length was less than 2 months.

Height and width combinations. If I had more samples, I feel confident that wedges both tall and wide would outperform, but I have been fooled before. Just because the height or width characteristic does well by itself does not guarantee good performance when combined. What we can say from the numbers is that you should avoid short wedges.

Table 52.7 shows volume-related statistics.

Volume trend. Wedges with breakouts that follow the market trend (upward breakouts in a bull market or downward breakouts in a bear market) do better with a rising volume trend from the start of the pattern to the breakout. Countertrend patterns do better with falling volume.

Table 52.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	34%	25%	–12%[a]	–26%[a]
Falling volume trend performance	32%	26%	–15%	–22%
U-shaped volume pattern performance	31%	26%[a]	–14%[a]	–26%[a]
Dome-shaped volume pattern performance	31%	19%	–15%	–22%
Neither U-shaped nor dome-shaped volume pattern performance	36%	32%	–15%	–23%[a]
Heavy breakout volume performance	36%	28%	–15%	–25%
Light breakout volume performance	28%	23%	–14%[a]	–20%[a]

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Volume shapes. Falling wedges with upward breakouts and random volume shapes outperform the other shapes. Downward breakouts are mixed and additional samples might help determine a winner.

Breakout volume. In all cases, volume on the breakout day that is heavier than the prior 30-day average suggests a wedge that will do well. Light breakout volume suggests under performance.

Trading Tactics

Table 52.8 shows trading tactics for falling wedges.

Measure rule. For upward breakouts, the target price is the highest high in the formation. Prices reach that 70% of the time in a bull market and 60% of the time in a bear market. Figure 52.4 shows an example.

The highest price is just as the formation starts in early June at 48.63, and it becomes the target price. After the breakout, price hesitates and attempts a throwback to the formation trend line, but cannot quite reach it. After that, it is straight up. Price reaches the target in early August. The old high is a place of resistance and it takes about 2 weeks before price is able to push decidedly above that level. Price moves higher until hitting 51 before stumbling and entering an extended downtrend.

For downward breakouts, I used the formation height subtracted from the breakout price to compute a target. For example, the falling wedge shown in Figure 52.4 has a high of 48.63 and a low of 44.38. The height is the differ-

Table 52.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	For upward breakouts, the highest high in the wedge is the price target. For downward breakouts, use the formation height subtracted from the breakout price as the target.
Buy after breakout	Since price can break out in any direction, wait for a close outside the trend line before taking a position.
Buy after throwback or pullback	If you miss the breakout, trade the throwback or pullback. Trade when price resumes moving in the breakout direction.
Watch for dip	A substantial number of wedges break out downward but turn up and make a large rise.

ence between the two, or 4.25. If we assume that a downward breakout occurs at the low price in the pattern, that would give a target of 40.13 (or 44.38–4.25). A 10% decline sounds reasonable.

Buy after breakout. Two out of every three (68%) wedges break out upward, but you may stumble upon one that breaks out downward. Wait for price to close outside the trend-line boundary to signal the breakout. Only then should you trade the wedge.

Buy after throwback or pullback. Pullbacks are more likely than throwbacks to occur (about 70% of the time versus 58%). The best performance comes if a throwback or pullback does not occur. Search for overhead resistance or underlying support before trading.

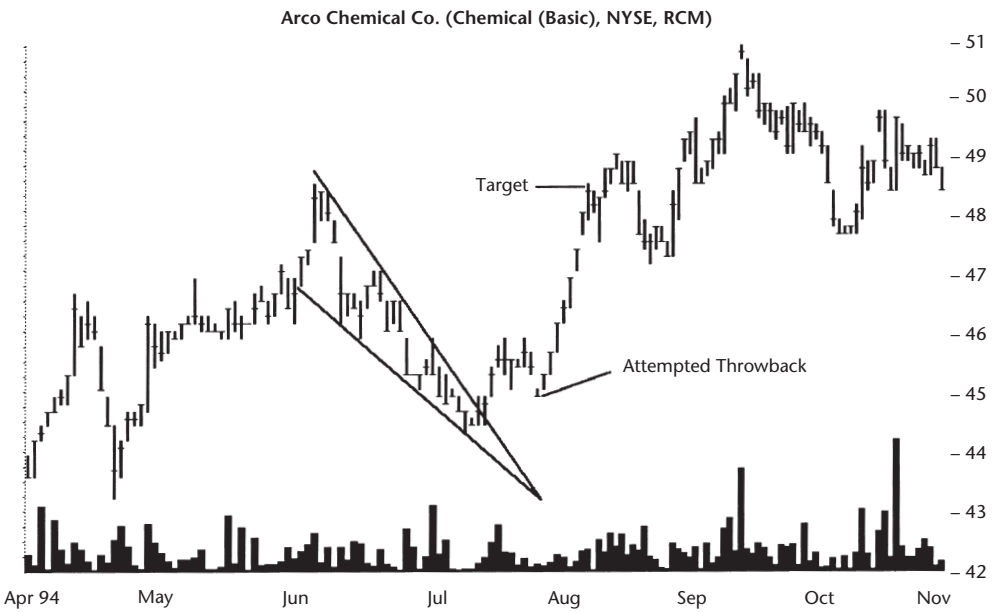


Figure 52.4 The highest price in the formation becomes the target price to which the stock will climb at a minimum.

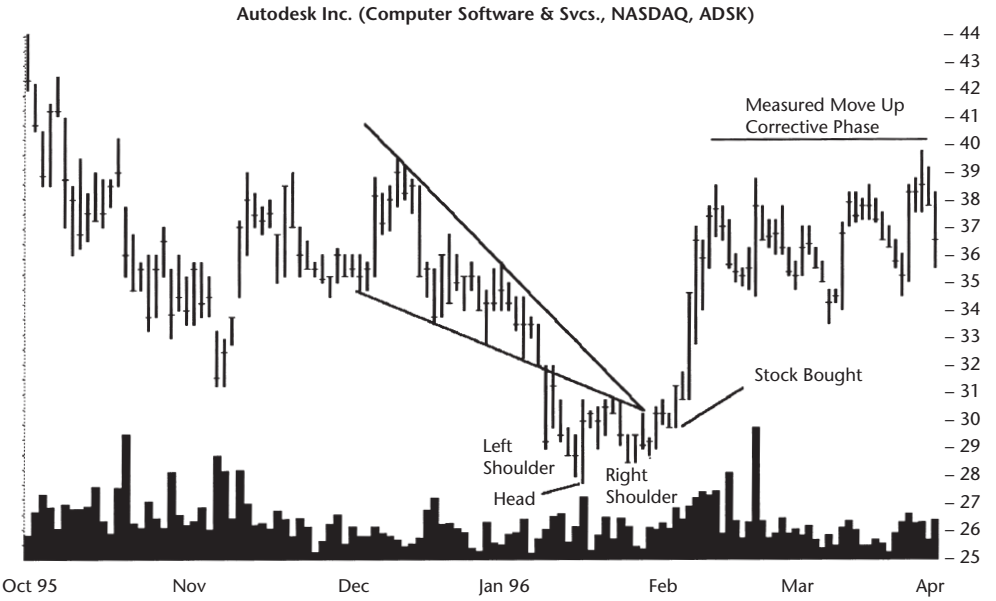


Figure 52.5 More than one-fourth of falling wedges drop below the bottom trend line and then quickly turn up and head higher. A small head-and-shoulders bottom appears as prices swing around the apex.

If the wedge throws back or pulls back, you can add to your position or put on a new one. Do so only after the throwback or pullback completes. By that, I mean wait for price to resume rising (after a throwback) or falling (pullback). In some cases, price continues moving in the adverse direction.

Watch for dip. As I was researching this formation, I noticed an interesting quirk. Sometimes prices drop below the bottom trend line, circle around, then head up. Figure 52.5 shows an example of this behavior. You can see in the figure that in early January, prices break out downward, circle around, and then move higher. In late April, prices rise to 44.25, well above the low of 27.75.

Sometimes the downward breakout takes the form of a premature downward breakout. Prices might drop below the trend line for a few days and then reenter the formation only to zoom out the other side and stage an upward breakout. In either case, the real action is upward. Over a quarter (27%) of all falling wedges show this momentary downward spin.

Sample Trade

Clint is the CEO of a small company that specializes in software for chambers of commerce. It is a cut-throat business because market growth is limited. The only way to increase revenue is to take business away from a competitor. Once a company entrenches itself with a chamber, it is almost impossible to pry it

loose. But Clint has had some success because of the breadth of his offerings and some skilled marketing ploys.

When Clint is not worrying about his business or pitching his wares to a prospective customer, he plays the stock market hoping to make enough extra income to someday buy out his closest competitor. He added multimedia to his demo and that is what alerted him to the company shown in Figure 52.5.

Clint watched the stock stumble and then saw the falling wedge form. He hoped that the new chart pattern marked the limit of the downward move and that he could buy in at a good price with a mouthwatering chance of prices rising to the old high.

When the stock punched through the bottom wedge trend line, he waited to see what price would do next. It curled around and made a mini head-and-shoulders bottom. He penciled in a neckline joining the rises between the two shoulders, following the slope of the lower wedge trend line.

Once price pushed above the neckline and above the wedge apex, he placed an order with his broker and received a fill at 30. Clint's timing was excellent. Two days after he bought, prices were already in the mid-thirties and climbing. He saw prices go horizontal in mid-February through March and wondered if this were the corrective phase of a measured move up formation. That is the way he decided to play it.

The base of the measured move was at the head, 27.75, and the top of the corrective phase was at 38.50. The height was the difference between the two or 10.75. Projecting the height upward from the corrective phase bottom of 33.50 gave him a target of 44.25. He phoned his broker and placed a limit order to sell his holdings at that price.

In mid-April the stock left the corrective phase and started climbing again on the second leg up. In late April, an e-mail message from his broker told him price reached his target and the stock sold at 44.25. In the days that followed, he smiled at his luck. Not only did he hit the high exactly, but the stock tumbled below 30 by the start of July.

For Best Performance

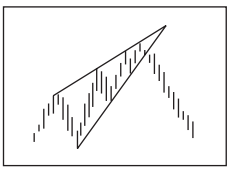
The following list includes tips and observations to help select falling wedges that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 52.1.
- Wedges acting as reversals perform better than continuations of the price trend—Table 52.2.
- Trade with the market trend: upward breakouts in bull markets and downward breakouts in bear markets—Table 52.2.

- Bear markets decline faster than bull markets rise, so be prepared to take profits quickly after a downward breakout in a bear market—Table 52.2.
- Trade busted patterns in which price declines less than 5% after the breakout then starts moving up—Table 52.2.
- Wedges with downward breakouts in a bear market have the lowest failure rates, but for larger moves, wedges with upward breakouts do better—Table 52.3.
- Throwbacks and pullbacks usually hurt performance, so avoid overhead resistance or underlying support—Table 52.4.
- Gaps in a bull market help wedge performance—Table 52.4.
- Expect the breakout to occur just over halfway to the apex—Table 52.4.
- For wedges with downward breakouts, expect to take profits quickly; be more patient with upward breakouts—Table 52.5.
- Select tall or wide patterns; avoid short patterns—Table 52.6.
- Wedges with breakouts in the market direction do better with rising volume trends; countertrend wedges do well with falling volume—Table 52.7.
- Select wedges with heavy breakout volume—Table 52.7.

53

Wedges, Rising



RESULTS SNAPSHOT

Upward Breakouts

Appearance	An upward price spiral bounded by two intersecting, up-sloping trend lines
Reversal or continuation	Short-term bullish continuation

	Bull Market	**Bear Market**
Performance rank	18 out of 23	17 out of 19
Break-even failure rate	8%	14%
Average rise	28%	17%
Change after trend ends	–30%	–35%
Volume trend	Downward	Downward
Throwbacks	73%	66%
Percentage meeting price target	58%	33%

Surprising findings	Busted patterns perform well. Wide patterns perform better than narrow ones. Wedges with a rising volume trend or heavy breakout volume do well.
Synonyms	Ascending wedges
See also	Pennants

Downward Breakouts

Appearance	Same, but breakout is downward
Reversal or continuation	Short-term bearish reversal

	Bull Market	Bear Market
Performance rank	20 out of 21	21 out of 21
Break-even failure rate	24%	15%
Average decline	14%	20%
Change after trend ends	53%	36%
Volume trend	Downward	Downward
Pullbacks	63%	63%
Percentage meeting price target	46%	40%
Surprising findings	Busted patterns perform well. Pullbacks hurt performance. Tall patterns perform better than short ones.	
Synonyms	Same as for upward breakouts	
See also	Same as for upward breakouts	

I received an e-mail asking if the S&P 500 index was making a rising wedge beginning in December 2002. I pulled up the chart and, sure enough, the wedge was as plain as day and almost a year long. In my daily review of stock charts, I missed finding this one. That is the major problem with wedges, whether rising or falling. You cannot find them. Not only are they rare, but also their spiraling price action seems hidden in a historical price series. A few stand out and shout "rising wedge," like the ones shown in the figures accompanying this chapter, but most remain hidden like a raindrop joining a pond.

The Results Snapshot gives you the bad news. Rising wedges are lousy performers. In all market conditions and breakout directions, the average rise or decline is below the average for all other chart patterns. The failure rates, most of which are double digits, are higher than I like to see and one even goes above the 20% maximum I allow for well-performing patterns.

Are there no redeeming qualities? Busted patterns perform well, beating the average rise or decline posted by all rising wedges. So, if you see price nipping outside of the wedge trend line that then returns and makes a breakout in the opposite direction, it might be worth a closer look.

Perhaps the most surprising thing about rising wedges is that the usual surprises do not apply. For example, tall patterns perform better than short ones, but that is only true for downward breakouts from wedges. Throwbacks and pullbacks usually hurt performance, but that is only true for wedge pullbacks (downward breakouts).

Tour

Figure 53.1 shows an example of a rising wedge. For years, the stock moved in a nearly horizontal trading range between about 25 and 31. The rising wedge

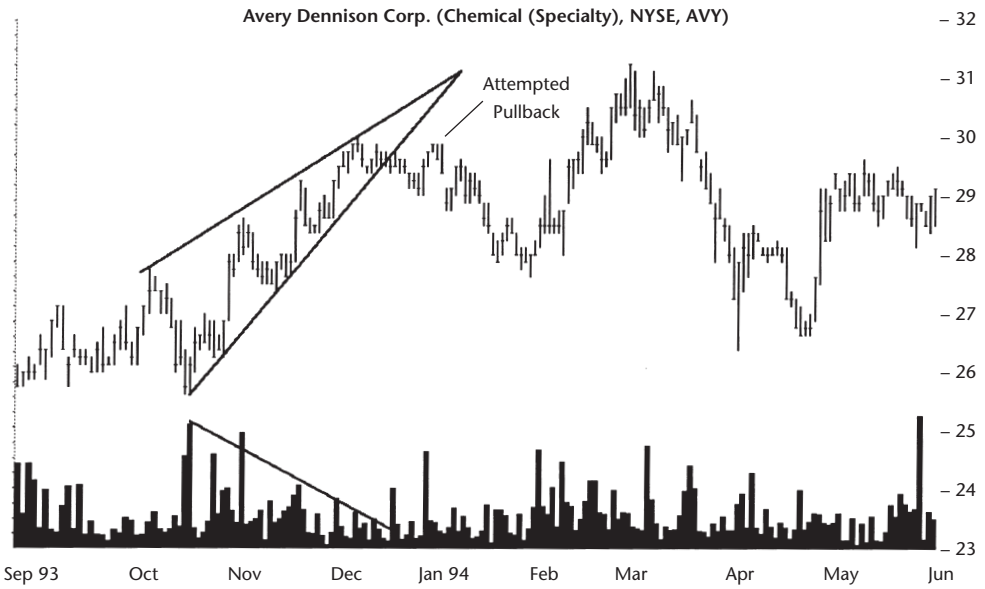


Figure 53.1 A rising wedge with two up-sloping trend lines. The volume trend usually slopes downward.

chart pattern formed near the bottom of that range. Prices came off the prior high, rounded about, and headed up in October.

It was not clear from the chart pattern until well into the formation that a rising wedge was forming. The side-to-side oscillations bounded by the two rising trend lines gave a clue to the outcome. The receding volume trend bolstered the case that the pattern was indeed a rising wedge.

During mid-December, price did not break down out of the of the formation so much as just meander lower. There was high volume on December 16, which probably marked the actual breakout, but it only lasted 1 day.

Price attempted a pullback to the lower formation trend line but did not quite make it. Price moved lower, recovered to post a new high, and then withdrew to make another minor low during April. The April low marked the beginning of a new uptrend that lasted beyond the end of this study in mid-1996. By that time, the stock reached 58.63.

Identification Guidelines

Rising and falling wedges are among the most difficult formations to identify. However, there are some guidelines that can make identification easier and Table 53.1 lists them.

Two up-sloping trend lines. Refer to the rising wedges in Figure 53.2 as I discuss the guidelines. You probably first notice the two up-sloping trend lines. Both lines must slope upward and no near-horizontal trend lines are allowed (a horizontal top trend line indicates an ascending triangle).

Table 53.1
Identification Characteristics

Characteristic	Discussion
Two up-sloping trend lines	Draw two trend lines, one along the minor highs and one along the minor lows. The trend lines must both slope upward and eventually intersect.
Multiple touches	Well-formed rising wedges have multiple touches of the two trend lines. Be skeptical of wedges having fewer than five touches (three on one side and two on the other).
Three-week minimum	A rising wedge has a minimum duration of 3 weeks. Anything less is a pennant. Formations rarely exceed 3 or 4 months long.
Volume trend	Volume usually trends downward throughout the formation.

Price moves upward, forming higher highs and higher lows, but two trend lines bound the price action. Rarely does price move outside the two trend lines until the final breakout.

Multiple touches. A well-formed rising wedge has multiple touches of the trend-line boundaries. Figure 53.2 shows the touches labeled 1 through 5. Fewer than five touches, three on one side and two on the other, should cast the formation in a dim light. It might not be a rising wedge at all.

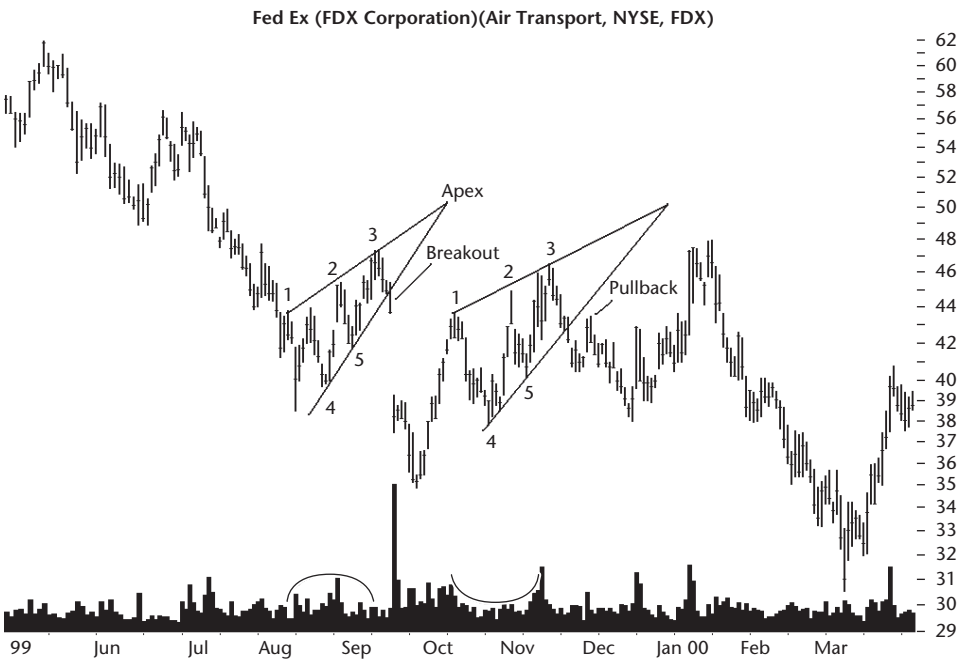


Figure 53.2 Shown are two rising wedges with at least five touches of the two trend lines. One has dome-shaped volume, the other, U-shaped volume.

Three-week minimum. A rising wedge takes time to form. Prices make new minor highs and minor lows as they bounce from trend line to trend line. It takes over 3 weeks for the formation to take on the wedge appearance. Formations shorter than 3 weeks are pennants. However, rising wedges do not last long. Typically, the apex—where the two trend lines meet—marks the end of the formation. Prices usually break out about half to two-thirds of the way to the apex. Rising wedges rarely last more than three months (just 21 patterns, or 3%, are longer than 3 months).

Volume trend. The receding volume pattern is another key element in correctly identifying a rising wedge. Most of the time, volume trends downward and becomes especially low just before the breakout. However, this is not an absolute rule. If you suspect a wedge but it has a rising volume trend, then ignore the volume trend. Review the other guidelines (especially the number of touches) to make sure the chart pattern resembles a rising wedge. If there is doubt, do not invest until the stock breaks out of the formation. Not trading a wedge until after the breakout is almost always a wise course of action.

Rising wedges can form anywhere. You might expect them to form at the end of a long uptrend and that is indeed the case most of the time. Occasionally, prices are heading downward and a rising wedge forms as a sort of retrace against the downward trend. After the breakout, prices resume falling.

Focus on Failures

With poor measure rule performance and a small average rise or decline, it should come as little surprise that rising wedges have higher failure rates than other formations. Consider Figure 53.3, a 5% failure in a rising wedge. Prices that drop by less than 5% before moving higher I call 5% failures.

You can see in Figure 53.3 the chart pattern forms after a downward price move of nearly 2 months' duration. The wedge appears to be a retrace in a downward price trend. The formation is part of the second up-leg in a measured move up chart pattern. Not shown is the first up-leg but the decline between the two up-legs begins in late September, and a portion of it shows in the figure.

Thus, one might have reason to suspect that this formation might not work out as expected. Prices move up, touch the top trend line, and then bounce to the other side. Prices cross from side to side as they rise and form a narrowing price channel.

Prices drop out of the pattern 68% of the way to the apex, about where you would expect them to. Volume is unusual as it is trending upward, but begins receding the week before the breakout. It is exceptionally low just before the downward breakout.

Once price closes below the lower trend line, investors usually sell, helping drive prices down. However, volume is low on this breakout. Price need

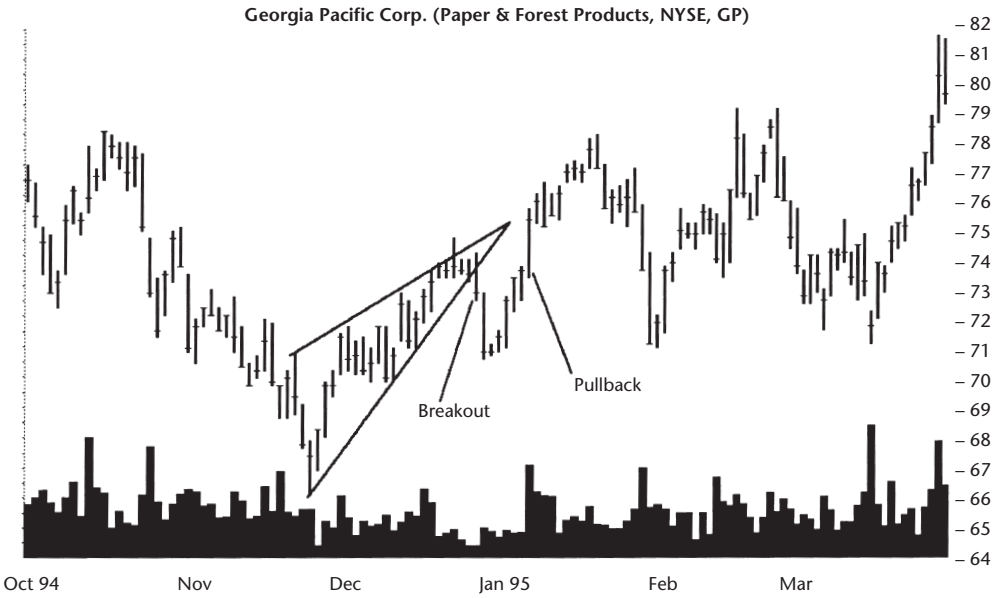


Figure 53.3 An example of a rising wedge 5% failure. Prices fail to move down by more than 5% before rebounding.

not have high volume to recede; sometimes it can fall on its own weight. Almost half (47%) of the formations in this study have breakouts with below average volume.

If you shorted the stock after the downward breakout, you would have visited the woodshed; price turns around and heads higher. In less than 2 weeks, price rises above the wedge top. In another 3 months, price finally breaks out of its consolidation zone and really begins climbing. In July, it reaches a new high of over 95.

Statistics

Table 53.2 shows the general statistics for rising wedges.

Number of formations. I uncovered 621 rising wedges in 500 stocks from mid-1991 to 1996 and from 1999 to mid-2004. I included some from dates between those periods, as I needed all the samples I could get. Still, I consider these formations rare, especially in a bear market.

Reversal or continuation. Depending on the breakout direction, wedges act as continuations (upward breakouts) or reversals (downward breakouts) of the prevailing price trend. Continuations perform better than reversals after downward breakouts. Upward breakouts show no real performance difference between reversals or continuations.

Average rise or decline. In the first edition of this book, I included premature breakouts and separated them from the actual breakout. In this edition,

Table 53.2
General Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Number of formations	128	64	292	137
Reversal (R), continuation (C)	45 R, 83 C	18 R, 46 C	194 R, 98 C	85 R, 52 C
R/C performance	28% R, 27% C	17% R, 17% C	–13% R, –17% C	–17% R, –23% C
Average rise or decline	28%	17%	–14%	–20%
Rises or declines over 45%	22 or 17%	8 or 13%	5 or 2%	10 or 7%
Change after trend ends	–30%	–35%	53%	36%
Busted pattern performance	36%	23%[a]	–17%[a]	–39%[a]
Standard & Poor's 500 change	10%	0%	1%	–6%
Days to ultimate high or low	127	60	38	38

Note: Minus sign means decline.

[a]Fewer than 30 samples.

I consider price closing outside the trend-line boundary as the breakout, whether it is premature or not. The effect of using this redefined parameter is an increase in the failure rate and a hindrance of the average rise or decline.

The best performance comes from wedges that follow the market trend—upward breakouts in a bull market and downward breakouts in a bear market. Stick with those directions for trading and avoid the countertrend wedges, the ones that break out against the market trend.

Rises or declines over 45%. Few wedges move more than 45%. The best showing is in a bull market, but even with 17% climbing at least 45%, that is still a poor showing.

Change after trend ends. As poorly as this pattern performs, the performance after the end of the trend is nothing to get excited about either. Only in a bull market with a downward breakout does a wedge perform anywhere near what it should by rising 53% after the ultimate low. Still, that is less than the 60+% we have seen in other chart patterns.

Busted pattern performance. In all cases, busted patterns perform better than the average rising wedge. For example, after price drops less than 5% in a bull market from a rising wedge, it soars 36%, which is well above the comparable rise of 28% for wedges with upward breakouts.

Standard & Poor's 500 change. The index climbed or dropped the most in step with wedges that climbed or dropped the most. This finding shows that the best results occur when the breakout direction and market direction are the same (bull market, up breakout and bear market, down

breakout). Wedges with breakouts against the market trend have performance that suffers.

Days to ultimate high or low. For upward breakouts, the time to the ultimate high ranges between 2 and 4 months. For downward breakouts, the decline lasts an average of 38 days (about 5 weeks). The decline in a bear market is steeper than is the rise in a bull market.

Table 53.3 shows failure rates for rising wedges. Wedges in a bull market with upward breakouts have the lowest failure rates. That finding may sound odd because rising wedges are supposed to break out downward and, presumably, that is the direction of best performance. However, the 8% failure rate in a bull market is half that of a bear market (15%).

Like all other chart patterns, the failure rates rise dramatically for small changes in the maximum price rise or decline. For example, 8% of the wedges in a bull market with upward breakouts fail to rise at least 5%. This figure triples to 23% failing to rise at least 10% and 36% fail to rise at least 15%. Over half do not rise over 20%.

The worst performance comes from wedges in a bull market with downward breakouts. Almost three of every four patterns (74%) will fail to drop at least 20%.

How do you use Table 53.3? Say your cost of trading is 5% and you want to make 20%, on average, for a total of 25%. Which breakout direction and market condition will work best for wedges? Answer: Select wedges with upward breakouts in a bull market. They fail 60% of the time to rise at least 25%, but that is the best of the lot. Do you really want to have two losing trades for every winning one? That winner will have to perform miracles for you to *net* 25%.

Table 53.3
Failure Rates

Maximum Price Rise or Decline (%)	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
5 (breakeven)	10 or 8%	9 or 14%	70 or 24%	20 or 15%
10	30 or 23%	22 or 34%	128 or 44%	52 or 38%
15	46 or 36%	35 or 55%	180 or 62%	70 or 51%
20	67 or 52%	40 or 63%	216 or 74%	91 or 66%
25	77 or 60%	45 or 70%	237 or 81%	99 or 72%
30	84 or 66%	49 or 77%	254 or 87%	109 or 80%
35	93 or 73%	52 or 81%	272 or 93%	115 or 84%
50	109 or 85%	60 or 94%	288 or 99%	129 or 94%
75	116 or 91%	63 or 98%	292 or 100%	135 or 99%
Over 75	128 or 100%	64 or 100%	292 or 100%	137 or 100%

Table 53.4
Breakout and Postbreakout Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Formation end to breakout	3 days	2 days	3 days	3 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L10%, C28%, H62%	L13%, C34%, H53%	L16%, C26%, H59%	L15%, C35%, H49%
Percentage rise/decline for each 12-month lookback period	L27%[a], C28%, H28%	L12%[a], C21%[a], H16%	L16%, C15%, H13%	L28%[a], C25%, H15%
Throwbacks/pullbacks	73%	66%	63%	63%
Average time to throwback/ pullback ends	9 days	10 days	10 days	8 days
Average rise/decline for patterns with throwback/pullback	26%	18%	–11%	–14%
Average rise/decline for patterns without throwback/pullback	31%	14%[a]	–19%	–29%
Performance with breakout gap	38%[a]	17%[a]	–11%	–23%[a]
Performance without breakout gap	26%	17%	–15%	–20%
Average gap size	$0.19	$0.24	$0.25	$0.54
Breakout distance to apex	64%	56%	58%	63%

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Table 53.4 shows breakout- and postbreakout-related statistics.

Formation end to breakout. The time from the end of the pattern to the breakout results from how I draw the patterns. I mark the end of the pattern as the first time price penetrates the trend line, not as the first close outside the trend line. Ignore the row. I show the numbers only for completeness.

Yearly position. As you can see, most rising wedges have breakouts near the yearly high. Few appear within a third of the yearly low.

Yearly position, performance. The best performers occur in the middle of the yearly price range for upward breakouts and near the yearly low for downward breakouts. The results might change with additional samples. The numbers reflect how often the *breakout* appears within the associated price range, so keep that in mind.

Throwbacks and pullbacks. Throwbacks occur between 66% and 73% of the time, and pullbacks happen 63% of the time. After price breaks out, it takes between 8 and 10 days, on average, for the stock to return to the breakout

price. Note that in many cases price did not have to return to the trend line to be classified as a throwback or pullback, just as long as it neared or touched the breakout price.

Wedges showing pullbacks suffered worse performance. For example, in a bear market, wedges with pullbacks declined 14%. Without pullbacks, the decline measured 29%.

Gaps. Gaps on the day of the breakout helped performance as long as the breakout was in the direction of the market trend (upward breakout in a bull market or downward breakout in a bear market). Countertrend wedges were either unchanged or showed better performance when no breakout day gap appeared.

The gap size was larger after downward breakouts than after upward ones, and this finding follows a trend I have seen with other patterns. Thus, if you want to take advantage of a possible gap, you must enter the trade before the breakout. Entering then will increase your risk, as you cannot accurately predict the breakout direction. For reference, 44% of the time the breakout is in the same direction as the trend leading to the wedge. That finding means if price is rising into the wedge, chances are it will breakout downward. If price is declining into the wedge, chances are it will breakout upward.

Apex distance. The breakout occurs between 56% and 64% of the way to the wedge apex (where the two trend lines touch), on average. Most wedges occur in a bull market with a downward breakout, and the most powerful of those have breakouts between 60% and 90% of the way to the apex.

Table 53.5 shows a frequency distribution of time to the ultimate high or low. Notice how quickly some of the wedges reach the ultimate price. For example, 35% of the wedges with downward breakouts in a bull market bottom out in the first week. By the third week, 57% have reached the ultimate low. In contrast, upward breakouts show 21% reaching the ultimate high in the first week and just 30% by week 3.

Table 53.5
Frequency Distribution of Days to Ultimate High or Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market, up breakout	34%	8%	11%	5%	2%	2%	2%	3%	5%	3%	27%
Bull market, up breakout	21%	5%	4%	5%	6%	4%	1%	4%	5%	1%	45%
Bear market, down breakout	30%	12%	8%	8%	7%	8%	5%	1%	5%	4%	11%
Bull market, down breakout	35%	12%	10%	8%	5%	2%	4%	2%	3%	2%	16%

At the other end of the table, 45% of wedges with upward breakouts in a bull market are still searching for the ultimate high after 70 days (about 2.5 months).

Notice the slight uptick after 21 days for wedges with upward breakouts in a bear market. Eleven percent reach the high during that period. If you watch your stock closely, you may see it begin topping out after the second week. Be prepared to take profits then.

Table 53.6 shows statistics related to size.

Height. Most of the time, tall wedges perform better than short ones. The lone exception is for wedges with upward breakouts in a bull market. Under those circumstances, short ones perform better.

Width. Wide wedges perform better than narrow ones in all cases except those in a bear market with downward breakouts. Those perform better if the wedge is narrow. For reference, I used the median length as the separator between narrow and wide.

Average formation length. The average wedge length is consistent across the various breakout directions and market conditions: about 44 days long.

Height and width combinations. With additional samples, the results may change, but tall and narrow wedges perform best in a bear market. In a bull market, the best performance splits between wedges that are both short and wide (upward breakouts) and tall and wide (downward breakouts).

Table 53.6
Size Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Tall pattern performance	27%	22%	–17%	–21%
Short pattern performance	28%	12%	–12%	–19%
Median height as a percentage of breakout price	15.12%	18.33%	15.00%	21.11%
Narrow pattern performance	21%	16%	–12%	–21%
Wide pattern performance	34%	18%	–16%	–18%
Median length	38 days	34 days	37 days	37 days
Average formation length	46 days	44 days	42 days	44 days
Short and narrow performance	24%	10%[a]	–12%	–19%
Short and wide performance	36%[a]	16%[a]	–12%	–17%[a]
Tall and wide performance	32%	20%[a]	–19%	–19%
Tall and narrow performance	16%[a]	28%[a]	–13%	–25%[a]

Note: Minus sign means decline.

[a]Fewer than 30 samples.

Table 53.7
Volume Statistics

Description	Bull Market, Up Breakout	Bear Market, Up Breakout	Bull Market, Down Breakout	Bear Market, Down Breakout
Rising volume trend performance	33%[a]	18%[a]	–11%	–20%
Falling volume trend performance	26%	17%	–15%	–20%
U-shaped volume pattern performance	35%[a]	13%[a]	–14%	–16%[a]
Dome-shaped volume pattern performance	23%	22%[a]	–15%	–20%
Neither U-shaped nor dome-shaped volume pattern performance	29%	16%[a]	–13%	–21%
Heavy breakout volume performance	29%	18%	–14%	–18%
Light breakout volume performance	25%	14%[a]	–14%	–21%

Note: Minus sign means decline.

[a] Fewer than 30 samples.

Table 53.7 shows volume-related statistics.

Volume trend. Wedges with upward breakouts do better with a rising volume trend, but the sample size is small, meaning that the results may change. Those with downward breakouts in a bull market do better with a falling volume trend.

Volume shapes. Performance associated with volume shape has no consistent trend. Dome-shaped volume does well in the countertrend wedges (bear market, up breakout and bull market, down breakout). Again, additional samples may clarify the results.

Breakout volume. Wedges with upward breakouts do best with heavy breakout volume. Light breakout volume outperforms in wedges with downward breakouts in a bear market.

Trading Tactics

Table 53.8 shows trading tactics for rising wedges.

Measure rule. The measure rule for rising wedges is opposite that for falling wedges. The measure rule says that prices should decline (downward breakouts) to the start of the formation (the lowest low), at a minimum. For upward breakouts, I use the height of the wedge added to the breakout price. Even though the predicted decline is usually small, less than half of the formations meet the benchmark. I view a score of 80% as being reliable, so this for-

Table 53.8
Trading Tactics

Trading Tactic	Explanation
Measure rule	Prices should fall to the bottom of the formation, at a minimum. For upward breakouts, subtract the lowest low from the highest high and add it to the breakout price. The result is the target price.
Sell after breakout	Wait for the breakout (prices should close outside the trend line) to improve the chances of a successful trade.
Sell after throwback or pullback	If you miss the breakout and still want to trade the stock, sell short after a pullback, once prices turn down or after a throwback, once the rise resumes.
Take profit quickly	Since the postbreakout move is meager, be ready to pull the trigger and close out the trade.

mation comes up short. For upward breakouts, price reaches the target between 33% (bear market) and 58% (bull market) of the time.

Figure 53.4 shows one application of the measure rule. The well-defined rising wedge passes all the identification guidelines outlined in Table 53.1. An investor willing to short the stock would use the measure rule to gauge the profitability of the trade. In this example, the target price is the lowest price in

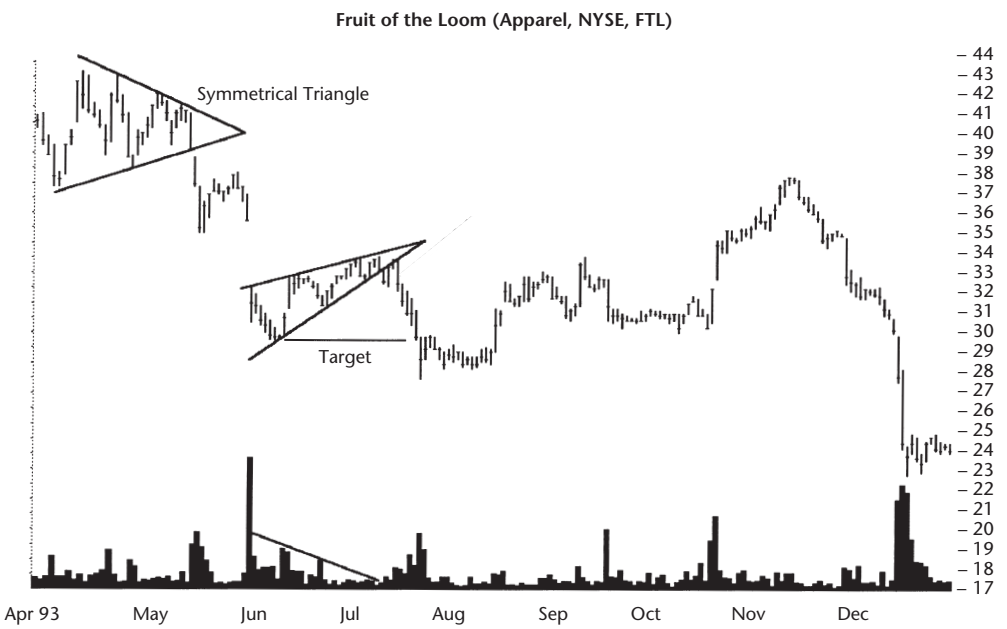


Figure 53.4 A downward breakout from the symmetrical triangle suggests price will fall. The measure rule for rising wedges with downward breakouts is simply the lowest price in the formation, shown here at 29.75.

the formation, or 29.75. Prices drop through the target just over a week after the breakout.

Sell after breakout. To improve the chances of investment success, sell short after a downward breakout or buy long after an upward breakout. Price must close outside the formation trend line before you place a trade.

Sell after throwback or pullback. If you miss the breakout, perhaps you can jump in on the throwback or pullback. Sixty-three percent of the formations pull back to the bottom trend line. Upward breakouts do even better, with 66% to 73% throwing back. After prices throw back or pull back, wait for them to start moving in the original breakout direction before investing.

Take profit quickly. The last guideline in the table suggests taking profits quickly. The average decline ranges between 14% and 20%. So, in all likelihood, the stock will decline only briefly before recovering. If the stock looks like it is making a turn upward, then close out your short position.

If you are considering shorting the stock, check the fundamentals and make sure there is a good reason for the stock to weaken. Just because you *hope* it will go down is no reason for the stock to comply.

Even for short-term (long side) traders, I do not suggest they sell their holdings if they see a rising wedge in a stock they own. Of course, if the fundamentals suggest otherwise, then sell your holdings and look elsewhere for another opportunity.

For upward breakouts, this rise is not all that exciting—17% to 28%. If you see a compelling opportunity in a stock you are familiar with, then trade it. Otherwise, wedges do not pose as good trading candidates.

Sample Trade

Joe is a midlevel manager at a large corporation. One of the qualities in which he is gifted is patience. He handles stress easily and does not let small problems bother him. In his spare time, he likes to trade stocks and has developed a keen sense to make short sales work for him.

After returning from vacation, Joe discovered the situation shown in Figure 53.5. He missed the initial downward breakout but still wanted to short the stock.

Viewing the chart from a longer-term perspective, Joe believed that the formation was an upward retrace in a long-term downtrend (not shown in the figure). At a minimum, he believed the stock would withdraw back to its base of about 30. He would consider closing out the trade at that point and not before unless price rose against him. So, he set a stop-loss order at the top of the formation at 36.75, about 0.25 point above the formation high.

If the stock continued in his favor, then it would be completing a downward measured move. Joe estimated that the measured move formation would take the stock to 28 and perhaps lower.

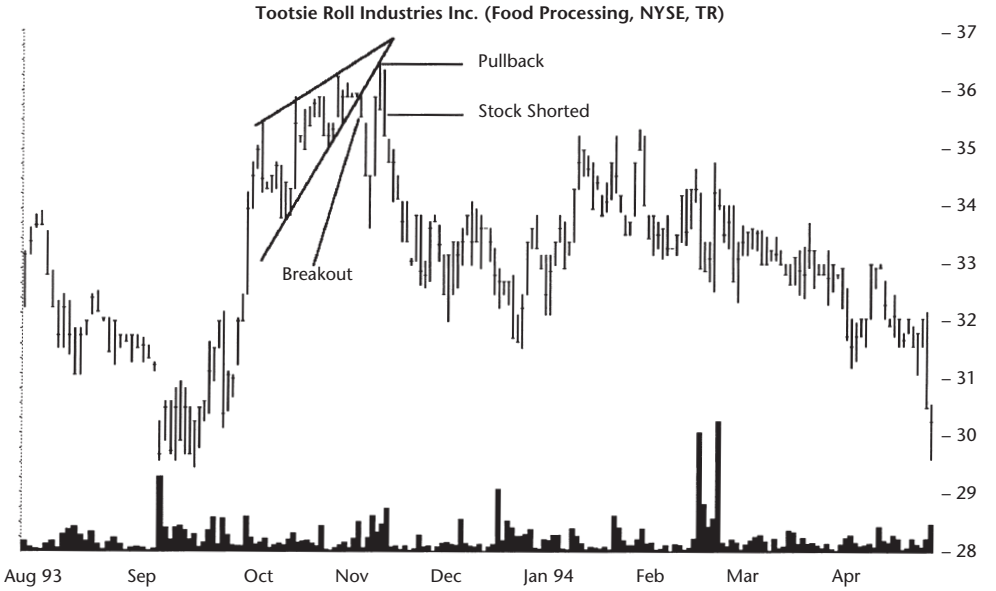


Figure 53.5 This rising wedge predicts prices will fall to 33.75 and they do, in just 2 days.

When the stock pulled back to the bottom trend line and headed down the next day, Joe sold the stock short and received a fill at 36. He reviewed the measure rule that said the stock would fall to the bottom of the formation for a decline of about 6% from the purchase price.

Joe watched the stock closely and was gratified to see prices soon drop below the measure rule target of 33.75. Then the stock rebounded. As the stock climbed at the start of December, Joe reevaluated his short position. From what he was able to gather, the fundamental and technical situation had not changed so he decided to sit tight.

Even as the stock climbed above 35, Joe believed he was right. The tenacious attitude served him well on this trade and the stock soon began heading down again. In May, the stock reached his target price of 30 and Joe considered closing out his position, but did not.

The stock moved sideways for about 4 months and then dropped again. It reached a low of 25.43 in mid-December and headed back up. Joe closed out his short position at 27, just a week after it made a new low. On the trade, Joe made almost $9,000, or about 25%, on his 1,000 shares in about a year.

For Best Performance

The following list includes tips and observations to help select rising wedges that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 53.1.
- Continuations show the best performance after a downward breakout—Table 53.2.
- Trade busted patterns when the new direction aligns with the market trend—Table 53.2.
- The decline in a bear market is steeper than in a bull market—Table 53.2.
- Select wedges in a bull market with upward breakouts; they have the lowest failure rates—Table 53.3.
- Pullbacks hurt performance—Table 53.4.
- Gaps help performance but only if the breakout is in the direction of the market trend—Table 53.4.
- Downward breakouts reach the ultimate low quickly—Table 53.5.
- Upward breakouts in a bear market may show weakness after week 2—Table 53.5.
- Select tall patterns for most wedges—Table 53.6.
- Pick wide patterns for most wedges—Table 53.6.
- Wedges with upward breakouts do best if volume is rising and breakout volume is heavy—Table 53.7.

PART TWO

Event Patterns

In this part, I have grouped chapters discussing what I call "event" patterns. These are price patterns caused by significant events that affect stocks. In some cases, you can swing trade the reactions to these events. Here are brief explanations of each event:

Dead-cat-bounce: price drops from 15% to 75%, usually in one session, then bounces and drops lower.

Inverted dead-cat bounce: price jumps from 5% to 20% in one day and then gives back most of it.

Earnings surprises, bad and good: quarterly earnings announcements move the stock.

FDA drug approvals: announcements of new drug approvals by the Food and Drug Administration.

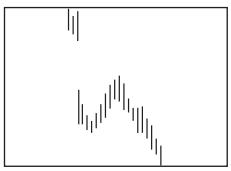
Earnings flag: a special case of a surprisingly good earnings announcement; one of the best performing event patterns

Same-store sales, bad and good: announcement of sales results for stores open more than a year.

Stock downgrades and upgrades: brokers downgrade or upgrade stocks they follow.

54

Dead-Cat Bounce



RESULTS SNAPSHOT

Event	An upward bounce and a declining price trend follow a dramatic decline.	
Reversal or continuation	Short-term bearish reversal	
	Bull Market	**Bear Market**
Performance rank	Not applicable	Not applicable
Event decline	31%	35%
Bounce	28%	35%
Postbounce decline	30%	40%
Surprising findings	About half the dead-cat bounce patterns with gaps close within 6 months. Over 75% decline below the event low after the bounce. In a bear market, a second large decline is likely within 6 months. Large bounces occur after large event losses but take longer to peak. Small bounces occur after small event losses but they peak quicker.	

If you trade stocks long enough, you will probably run across this puppy: the dead-cat bounce. (I could not resist the pun). It acts as a warning to exit the stock quickly after a dramatic decline.

The dead-cat bounce pattern (DCB) consists of three phases. First, the event sees prices decline over 30% in just a few sessions, the majority of the decline happening the first day. Second, prices bounce, recovering a portion of

what they lost; and third, prices ease down, giving back all of their gains and more in the postbounce decline.

Surprising findings include the following. If price gaps down on the first day, how long does it take for prices to rise far enough to cover the gap, that is, to close the gap? About half the time, the gap closes within 6 months, leaving half of all patterns still lower than where they started. After prices bounce, they move lower and over 75% make a low below that posted during the event decline. In many stocks, one DCB follows another, especially in a bear market. The final surprise is that DCBs with large event losses tend to bounce higher but take longer to peak than events with small losses.

If a dead-cat bounce occurs in a stock you own, ride price upward in the bounce and then get out. Prices will likely move lower and another DCB may await 3 or 6 months down the line. Do not trade any bullish chart pattern less than 6 months after a stock shows a DCB.

Tour

The name "dead-cat bounce" comes from the behavior of a stock after an unexpected negative event. Figure 54.1 shows a typical example of a DCB. In late September, the smart money started selling their holdings, driving down the price and pushing up the volume trend. Prices declined from a high of

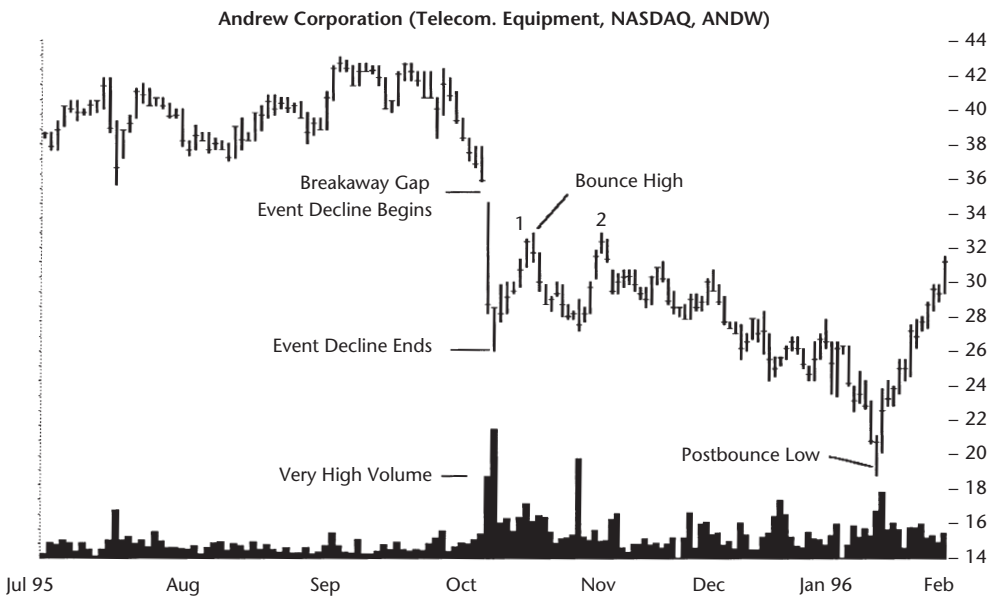


Figure 54.1 A major brokerage firm lowered its rating on the stock, sending it tumbling 50% in about 3.5 months. The dead-cat bounce allowed astute investors to sell their holdings and minimize their losses before the decline resumed. The twin peaks in mid-October (1, 2) and early November are a double top signaling further declines.

42.44 to 35.81 in just over a week. On October 9, a major brokerage house lowered its intermediate-term rating on the stock. Down it went. In 2 days the stock dropped over 30%.

For the next week and a half, the stock recovered somewhat, rising to 32.81 and enticing novice investors to buy the stock. The stock moved lower and then climbed again to form a double top. This rise was the end of the good news. From the second peak, it was all downhill until mid-January, when the stock bottomed. From the high before the event began to the ultimate low, the stock plunged 50%! Welcome to the dead-cat bounce.

Identification Guidelines

Are there characteristics common to the dead-cat bounce? Yes, and Table 54.1 lists them.

Price gap, plunge. Suppose a company announces a negative event, usually when the market is closed. The news surprises stockholders and they line up to sell. The overwhelming selling pressure forces the stock to gap lower on the open. For this study, I used a minimum event decline of 15% but most ranged from 25% to 45% and one was as high as 78%. Imagine waking up to find a $10,000 investment worth just $2,200. The plunge usually takes 1 or 2 days, but the downward trend before price begins to bounce can last longer, up to 8 days.

Bounce. Prices bounce up, recovering much of what they lost during the event decline. The recovery typically ranges between 15% and 35% and takes between 5 and 25 days to reach the top of the bounce.

Decline. After price peaks during the bounce, it drops, falling slowly, until reaching a trend low 15% to 45% below the bounce top. It makes this journey in 10 to 50 days, usually.

To put the numbers into perspective, consider Figure 54.2, a 47%, 1-day decline. The Food and Drug Administration's advisory panel rejected Cephalon's Myotrophin drug application. When the news hit the Street, the stock gapped down and traded at almost half its value. Volume was a massive

Table 54.1
Identification Characteristics

Characteristic	Discussion
Price gap	The daily high is below the prior day's low, leaving a price gap (breakaway) on the chart.
Plunge	On the negative announcement, price gaps down and plunges, usually between 25% and 40% but can be as much as 70%.
Bounce	Prices recover between 15% and 35%. Do not be fooled; the decline is not over.
Decline	After the bounce finishes, another decline begins. This one is more sedate but prices typically decline another 15% to 30%.

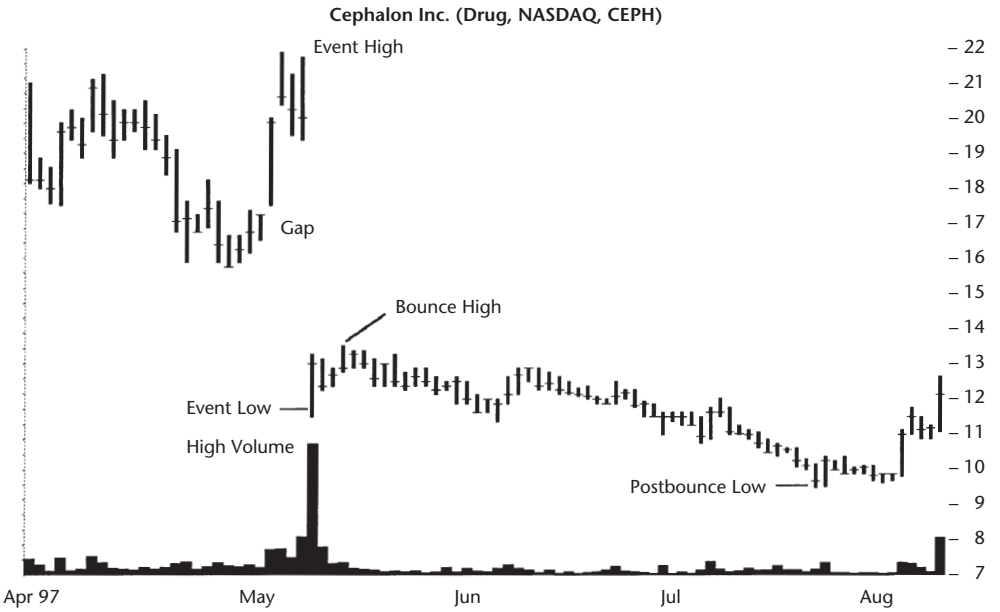


Figure 54.2 A negative announcement triggered the dead-cat bounce, which began when prices gapped down, bounced upward, and then trended lower.

8.4 million shares, more than 15 times normal. During the next 3 days, the stock recovered a portion of its decline by gaining $2 a share (low to high). Then the remainder of the decline set in. As if rubbing salt in the wound, the stock moved down again in an almost straight-line fashion. From the recovery high, the stock declined another 30%.

Figure 54.3 shows an even more alarming decline. Just 3 days before the massive decline, a brokerage firm reported that it believed the company would continue seeing strong sales and earnings trends. Perhaps this report boosted expectations, but when the company announced a quarterly loss—instead of the profit the Street was expecting—the stock dropped almost 43 points *in 1 day*. That is a decline of 62%.

The stock gapped downward, a characteristic that most DCBs share. A negative news announcement is so surprising that sell orders overwhelm buying demand. The stock opens at a much lower price. Volume shoots upward, typically several times the normal rate. Figure 54.3 shows that 49 million shares exchanged hands on the news, about 20 times normal.

Usually the 1-day decline establishes a new low and prices begin recovering almost immediately. Figure 54.3 shows that the stock made a new low the following day but then closed up a day later.

After a massive decline, the bounce phase begins. Most of the time, a stock will rise up and retrace some of its losses. However, the bounce phase for Oxford Health Plans was brief—only 1 day. In less than 2 months, the stock dropped by half.

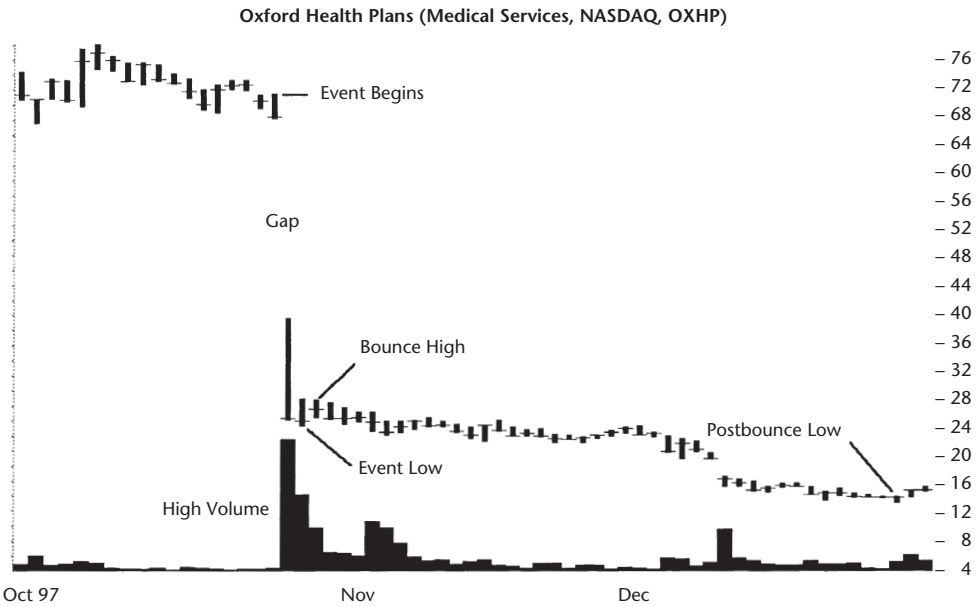


Figure 54.3 Negative news announcement triggered the massive 1-day decline, which saw prices drop by 43 points or over 60%, but the decline was not over as the stock fell an additional 43%.

What types of events cause these massive declines? Almost all the events are company specific: negative earnings surprises, bad same-store sales numbers, failed mergers, accounting sleight of hand, outright fraud—that sort of thing. Sometimes the news affects more than one company. Figure 54.2 shows what happened to Cephalon, but Chiron stock was not immune. Chiron has a joint development and marketing agreement with Cephalon for the Myotrophin drug, so its stock also took a hit, but not nearly as large (less than 5%) as Cephalon.

Most of the time investors cannot predict the event. If you own the stock, you will lose your shirt. The question then becomes, how much of your remaining wardrobe do you want to lose? We see in the Trading Tactics section that it pays to sell quickly.

Focus on Failures

Not all massive declines end in a dead-cat bounce. Consider the event shown in Figure 54.4. On April 3, 1997, the company released earnings that fell short of expectations and announced that it terminated the merger with another company. Several brokerages downgraded the stock. Price tumbled 44%. Like all dead-cat bounces, the stock recovered. However, instead of bouncing up, then turning down and moving lower, this stock continued trending up. In less than 3 months, the stock recovered its entire loss.

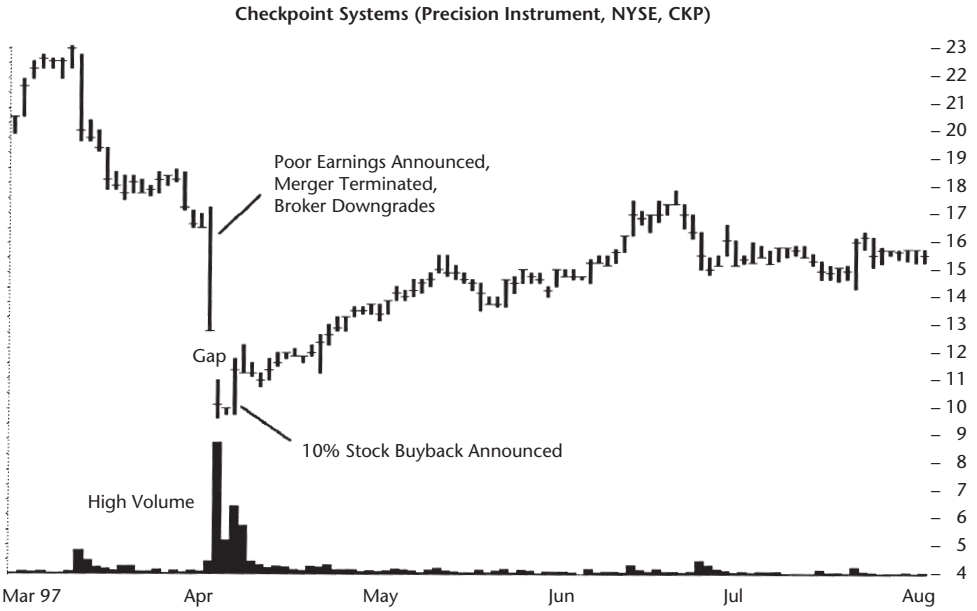


Figure 54.4 A dead-cat bounce formation failure. After the decline, the stock moved higher and kept rising instead of moving back down.

Why did the stock fail to bounce and head lower? Events that take place just after the negative news announcement explain the stock's behavior. Several insiders bought the stock. Even the company got into the act and announced it was purchasing 10% of the stock. Together, the news sent the stock moving higher. Subsequent events kept the momentum building and the stock continued rising.

Statistics

Table 54.2 shows general statistics for DCBs.

Number of formations. I used DCBs that I found when researching the first edition plus newer ones. I excluded those DCBs that showed event

Table 54.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	454	222
Reversal (R), continuation (C)	237 R, 217 C	115 R, 107 C
Percentage occurring near the 12-month low (L), center (C), or high (H)[a]	L31%, C44%, H25%	L47%, C33%, H20%

[a]The reference used is the closing price the day before the event. The first edition of the *Encyclopedia* used the high price the day before the event, so results vary.

Table 54.3
Event Decline Statistics

Description	Bull Market	Bear Market
Number with event day gaps	337 or 74%	179 or 81%
Average gap size	$2.59	$4.06
Event decline (prior close to trend low)	31%	35%
Event duration (event day to trend low)	7 days	6 days
Number making a lower low the next day		
Event day + 1	207 or 46%	112 or 50%
Event day + 2	76 or 17%	61 or 27%
Event day + 3	39 or 9%	28 or 13%
Event day + 4	14 or 3%	12 or 5%

declines of less than 15%. I define the event decline as the move from the close the day before the event to the trend low, before the bounce begins. I used my database to match events to those large price moves; so if a stock dropped 20% but did not have an event associated with it, I ignored it. I found 676 DCBs from mid-1991 to mid-2004.

Reversal or continuation. Just 28 more DCBs acted as reversals of the price trend than continuations.

Yearly position. Using the closing price the day before the event as the reference in the yearly price range, we find that in a bull market DCBs appear most often in the middle of the range. In a bear market, they usually occur near the yearly low.

Table 54.3 shows event decline statistics.

Gaps. Between 74% and 81% of the dead-cat bounce patterns begin with a large price gap. This means the announcement came when the market was closed. When trading resumed, prices dropped significantly, far enough that subsequent intraday trading could not close the gap. By day's end, a gap averaging $2.59 in a bull market and over $4 in a bear market remained.

Event. The event decline, as measured from the close the day before the event to the trend low (before beginning a substantial rise to the bounce phase), averaged over 30%. The decline to the trend low took about a week, but that is an average pulled upward by several DCBs with long declines. If you use a frequency distribution, you find that about half the time, price makes a lower low the day after the event. Beyond that, fewer and fewer consecutive lower lows occur, as Table 54.3 shows.

What does this information mean? If you want to trade the bounce, place a buy order at the event day's low. The chances are about even that your order will fill and you can ride the bounce upward.

Table 54.4
Bounce Statistics

Description	Bull Market	Bear Market
Number of gaps closed during bounce (to bounce high)	74 or 22%	41 or 23%
Number of gaps closed in 3 months	127 or 38%	70 or 39%
Number of gaps closed in 6 months	195 or 58%	96 or 54%
Average bounce height (event low to bounce high)	28%	35%
Bounce duration (event low to bounce high)	23 days	21 days
Median event loss	28.74%	33.32%
Large event loss, resulting bounce rise	35%	44%
Small event loss, resulting bounce rise	22%	29%
Large event loss, resulting bounce duration	25 days	25 days
Small event loss, resulting bounce duration	20 days	16 days

Table 54.4 shows the bounce statistics for DCBs.

Gaps closed. After the event occurs, prices bounce, but how high? In just under a quarter of the cases, prices bounce high enough to close the event day gap. That means prices rise at least to the low the day before the event.

In 3 months' time, over a third of the event day gaps were closed. In 6 months, over half were closed. Viewed another way, half a year after the massive event decline, prices had not fully recovered in almost half the stocks showing a DCB.

Bounce. The bounce height, as measured from the trend low after the event to the highest high in the bounce, averaged 28% in a bull market and 35% in a bear market. This finding surprises me. I would expect the bounce in a bull market to be higher than the one in a bear market, but Table 54.4 shows that such is not the case.

The time to complete the bounce was nearly the same for both market types: about 3 weeks. Notice that the rise in a bear market is higher and quicker than that in a bull market. Thus, if you want to trade the bounce, select DCBs in a bear market.

Event loss size. I compared the size of the event loss to the resulting bounce. Table 54.4 shows the median decline from the close the day before the event to the trend low before the bounce began. Losses higher than the median I call large events; losses smaller than the median are small events. Then I mapped the bounce height and duration and found that large event losses result in large bounces. Small event losses result in small bounces. For example, when the loss was large, prices bounced 35% in a bull market. Small event losses showed bounces averaging 22%.

The bounce duration contradicts what I found in the first edition of this book, but I use more samples here and do not rely on the interpretation of a scat-

Table 54.5
Postbounce Statistics

Description	Bull Market	Bear Market
Postbounce decline (bounce high to postbounce low)	30%	40%
Postbounce duration (bounce high to postbounce low)	49 days	42 days
Event low to postbounce low	18%	27%
Number declining below event low	306 or 67%	167 or 75%
Decline from close day before event to postbounce low	38%	48%
Duration from day before event to postbounce low	79 days	69 days
Number with another 15% decline in 3 months	118 or 26%	105 or 47%
Number with another 15% decline in 6 months	174 or 38%	135 or 61%

ter plot. I found that large event losses result in bounces that take longer to peak. For example, in a bull market, a large event loss takes an average of 25 days for price to peak in the bounce phase. Small event losses take 20 days to peak.

Table 54.5 shows the postbounce statistics. Postbounce is the decline measured from the highest high in the bounce to the postbounce low—the lowest low before the postbounce changes.

Postbounce. Once prices peak in the bounce phase of a DCB, they decline 30% in a bull market and float like stones by plummeting 40% in a bear market. The time to make such a large drop is quicker in a bear market: 42 days versus 49 days in a bull market. If you want to short a stock after a DCB, try to time it so you open the short near the bounce peak and ride it down in a bear market.

Event low to postbounce low. This criterion measures the decline if you decided to ride out a DCB. The event low is the lowest low before price begins its rise to the bounce high. The postbounce low is the lowest low after the bounce. The difference between the event low and postbounce low is how bad things get after the large event decline. In a bull market, the additional decline measures 18% and in a bear market, it averages 27%. Over two-thirds of the stocks (67% to 75%) dropped below the event low.

What does all this information mean? Suppose someone catches the CFO with his hands in the cash register and the stock's price drops 40% in 2 days during a bear market. Should you ride the bounce upward and then get out, or just hold on? Answer: Ride it up and sell at the bounce high. Once the bounce completes, expect an additional decline of 27% for a combined loss of 67%.

Event start to postbounce low. The decline using the close the day before the event to the postbounce low measures 38% in a bull market and 48% in a bear market. This measure is the average decline suffered by investors holding onto the stock until they sell at the very bottom. It takes between 69 days and 79 days to inflict such pain.

Additional DCBs. I looked at the number of large declines (over 15%) in the days after a DCB. My contention is that a DCB follows a DCB because management cannot fix severe problems in just one quarter.

For which data were available, 26% to 47% of the DCBs followed an existing DCB in 3 months, and 38% to 61% had another DCB within 6 months. Especially in a bear market, the numbers suggest that you make the best of a bad situation and get out of a long holding during the bounce phase. If you do not sell, you will suffer through the decline, and the chances of another DCB occurring are high.

Table 54.6 shows a frequency distribution of time for the three phases of a DCB, in calendar days, not trading days. What do the numbers tell us?

Event decline. Consider the event decline, the first block of numbers. This block shows how quickly price bottoms after a massive decline. For example, in a bear market 53% of the stocks with DCBs reach the trend low in 2 days or less. Since the columns are additive, 71% (53% + 8% + 10%) reach bottom in 6 days or less.

Bounce. The next block shows the time for prices to rise to the top of the bounce after reaching the event low. For example, in a bear market, 30% of the stocks showing a DCB take 5 days or less to reach the highest high before price begins another decline. In 10 days time, almost half—48% (30% + 18%)—will have reached the bounce high.

Table 54.6
Frequency Distribution of Time

Days:	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**>18**
Event decline, bear market	53%	8%	10%	7%	4%	3%	3%	2%	1%	9%
Event decline, bull market	54%	6%	8%	8%	4%	3%	4%	2%	2%	11%
Days:	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**>45**
Bounce rise, bear market	30%	18%	8%	10%	9%	5%	2%	3%	3%	11%
Bounce rise, bull market	26%	19%	12%	7%	7%	5%	4%	1%	4%	15%
Days:	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**>90**
Postbounce decline, bear market	19%	20%	17%	6%	13%	5%	5%	4%	3%	9%
Postbounce decline, bull market	16%	20%	14%	11%	8%	5%	6%	4%	3%	15%

Table 54.7
Frequency Distribution of Price

Percentage:	15	20	25	30	35	40	45	50	55	>55
Event decline, bear market	0%	6%	16%	17%	15%	11%	14%	6%	9%	6%
Event decline, bull market	0%	13%	19%	22%	15%	11%	8%	3%	6%	4%
Bounce rise, bear market	17%	11%	11%	9%	12%	8%	6%	2%	2%	22%
Bounce rise, bull market	23%	15%	10%	11%	7%	8%	6%	5%	3%	13%
Postbounce decline, bear market	5%	15%	10%	10%	9%	9%	11%	6%	7%	17%
Postbounce decline, bull market	16%	15%	15%	14%	9%	8%	7%	5%	4%	7%

Postbounce. The last block shows how long it takes price to reach the postbounce low. For example, in a bear market, 19% take less than 10 days to reach the low. Within a month, 56% (19% + 20% + 17%) will have bottomed.

The table gives you some idea of how long it will take the average stock to navigate the three phases of a DCB: the event decline, the bounce phase, and the postbounce decline. Remember, though, that since we are dealing with probabilities here, anything can happen.

Table 54.7 is similar to Table 54.6 but concerns price.

Event decline. The first block of numbers shows the decline from the close the day before the event to the event low. For example, in a bear market 6% of the stocks with DCBs show declines of between 15% and 20%. Since the columns are additive, 39% (0% + 6% + 16% + 17%) have declines that range up to 30%. The table shows that most DCBs (73%) have declines that range from 25% to 45% (bear market) and 80% will decline between 20% and 40% in a bull market.

Bounce. The next block of numbers shows the height of the bounce as measured from the event low to the highest high in the bounce. In a bear market, for example, 17% of the stocks with DCBs have bounces that rise 15%. Most of the bounces (60% of them) will fall between 15% and 35%. In a bull market, most (59%) will bounce up to 30% higher.

Postbounce. The final block of numbers shows the depth of the postbounce decline as measured from the highest high in the bounce to the postbounce low. For example, in a bear market, 5% of the stocks showing DCBs will decline up to 15%. Another 15% will decline between 15% and 20%. Most of the stocks (64%) have postbounce declines that range from 20% to 45%. In a

bull market, the decline is smaller, with most stocks (60%) declining between 15% and 30%.

Taken together, Tables 54.6 and 54.7 show how long and how far price will move during a dead-cat bounce. They can help you construct a trading plan to take advantage of a DCB.

Trading Tactics

Table 54.8 shows trading tactics for the dead-cat bounce event pattern and Table 54.9 lists additional stocks with DCBs taken from my database on which you can hone your trading skills.

Sell long holdings. As bad as the event decline is, things will only get worse after prices finish bouncing higher. Table 54.5 shows that prices decline between 18% (bull market) and 27% (bear market) below the event low. Do you want to risk those additional losses?

Since you cannot avoid the event decline, ride it out, and wait for the bounce. Use Tables 54.6 and 54.7 to estimate how long and how far prices are likely to bounce. I have found that an up-sloping trend line drawn along the bottom of the minor lows as prices rise is effective in many cases. When price *closes* below the trend line, sell. You will not catch the bounce high and prices may resume rising without adding a postbounce decline, but selling is the best way to protect your wealth.

If you happen to be short the stock and a DCB occurs, expect a bounce followed by an additional decline. Table 54.5 shows that between 67% (bull market) and 75% (bear market) of the stocks showing a DCB will drop below the event low. You may be looking at the exception, so if price rises to close the event gap (between 22% and 23% will, from Table 54.4), consider closing out your short position.

Whether price will decline again (after the bounce) largely depends on the actions the company takes. Are insiders buying the stock? Has the company announced a stock buyback? Is the problem company specific or is everyone in

Table 54.8
Trading Tactics

Trading Tactic	Explanation
Sell long holdings	Wait for the bounce to peak and then sell.
Buy long	For swing traders, buy when price finishes the event decline. Sell when price peaks in the bounce phase. Never buy a stock showing a DCB just because it is cheap! It will be cheaper in the coming weeks.
Sell short	Short at the bounce high, ride prices lower, and cover when the trend changes.

Table 54.9
Additional DCBs

Company	Symbol	Date
Abbott Labs	ABT	6/11/2002
Abgenix	ABGX	8/19/2002
Administaff	ASF	5/1/2002, 8/1/2002
Advanced Micro Devices	AMD	1/14/1999, 7/6/2001, 4/18/2002, 10/3/2002, 1/17/2003
Airgas	ARG	4/27/1998, 4/28/2000
Any airline stock	ALK, CAL, DAL, FRNT, NWAC, LUV...	9/17/2001 (after 9-11 event)
Alkermes	ALKS	7/1/2002
Alpharma	ALO	7/30/2002, 8/15/2002, 9/9/2003
Amazon.com	AMZN	7/24/2001, 10/24/2001
American Power Conversion	APCC	7/31/2000

the industry getting beaten? If the industry is suffering, then look at other stocks in the industry. Are they showing signs of recovery? If so, then close out your short position. If the industry is suffering and the market is dropping, then consider riding out the bounce with the expectation that price will resume declining. Between a quarter (26%, bull market) and half (47%, bear market) will have another DCB within 3 months. Usually, these are quarterly earnings–related events such as a weak retail environment (missed same-store sales, or missed earnings estimates). If the company cannot fix the problem in 3 months, then another DCB may follow.

Buy long. Trading the bounce is a risky maneuver and should be attempted only by seasoned swing traders. First, compute the event loss size from the closing price the day before the event to the event low. Is the decline large or small? Compare it to the median event loss shown in Table 54.4 for the associated bull or bear market. If you are trading a large event, expect a large bounce but one that takes longer than usual. If the event decline is small, expect a smaller but quicker bounce.

Look for DCBs in a historical price series and trade them on paper to sharpen your skills before committing real money. Table 54.9 lists stocks with DCBs on which you can practice. Print out the price chart and cover it with a sheet of paper. Slide the paper to the right, uncovering the event. When should you buy and when should you sell?

Buy when prices finish dropping during the event decline (as close to the event low as you can get). Price will bottom in 1 or 2 days (46% make a lower low the second day, as per Table 54.3). You can place a buy order at the low of the first day and then pray that the order is hit. The average rise will take 23 days (Table 54.4) in a bull market and 21 days in a bear market. Table 54.6

zooms in on the statistics to help you time your exit. The rise to the bounce high will be different from that shown in the tables, you can count on it. Be flexible and remember that the tables show what will *probably* happen, but it does not guarantee the results.

Use the same tips as discussed in "Sell long holdings" to exit the trade as close to the bounce high as possible.

Sell short. If you think you can make money shorting a stock, try practicing your technique on those listed in Table 54.9. Pull up the stocks shown in the figures accompanying this chapter and practice on those as well.

When prices stop climbing at the top of the bounce, consider shorting the stock. Use whatever method you normally use to spot the trend change. These methods may include indicators such as moving averages, stochastics, RSI, CCI, trend lines, chart patterns, support and resistance, and so on.

Count on the stock dropping to at least the event low (see Table 54.5). Not all stocks will do that, but that is the way to bet. If the drop to that price is not mouthwatering, then look elsewhere for a more promising trade unless you have a strong reason for believing the stock will tumble. It may not. Use stops to protect your position.

Check the fundamentals and understand why the stock took a tumble in the first place (the event decline). This knowledge will often give you a clue as to future DCBs. Many times, the problem cannot be fixed in the current quarter, so additional quarters may suffer as well.

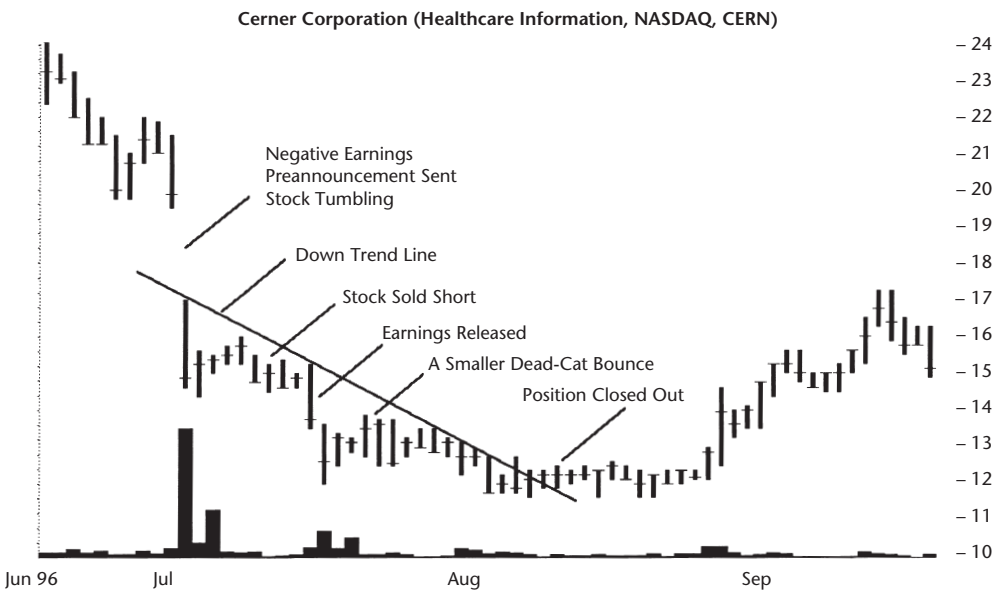


Figure 54.5 A negative earnings announcement triggers a dead-cat bounce. As described in the Sample Trade, Jill sold the stock short just after the bounce high then covered when price closed above the trend line. The trade resulted in a 20% gain in 1 month.

Sample Trade

Consider Figure 54.5, a dead-cat bounce in Cerner Corporation. The stock dropped five points (25%) after the company said earnings would fall short of expectations and the outlook for the remainder of the year was grim. The stock closed higher on each of the next 4 days and then closed lower. Jill, after seeing the stock climb the hill, sold the stock short and received a fill at the closing price of 15. She then waited, watching the stock closely. It continued moving down—as predicted.

The earnings announcement forced the stock down another 20% in 2 days. Expecting another dead-cat bounce, Jill held onto her position. The stock rose in an uneven fashion over the next week or so, and then rounded over and headed lower.

She connected the tops from the preannouncement day onward in a down-sloping trend line. When price eventually closed above the trend line, she knew it was time to close out the position. The next day she bought the stock back and received a fill at 12, 0.25 below the daily close. She sat back and totaled up her profits and realized she made almost $3 a share, or about 20% in just 1 month.

As good as the trade was, had she waited until November to close out the position, she would have made an additional $1.50 a share (the stock reached a low of 10.50). However, between the time of covering the short and the ultimate low, the stock climbed back to 17.25. The moral is, you never go broke taking a profit.

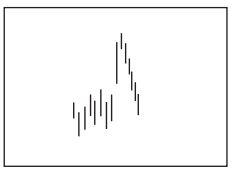
For Best Performance

The following list includes tips and observations to help select DCBs that perform better after the breakout. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 54.1.
- Nearly half the stocks make a lower low the day after the event—Table 54.3.
- A quarter of the stocks with event day gaps close during the bounce—Table 54.4.
- The larger the event day decline, the higher the bounce but the slower the rise—Table 54.4.
- Prices decline faster and steeper in a bear market—Table 54.5.
- Between 67% and 75% of stocks showing a DCB will drop below the event low after the bounce completes—Table 54.5.
- Between 38% and 61% of the stocks exhibiting a DCB will suffer another 15% or larger decline in less than 6 months—Table 54.5.

55

Dead-Cat Bounce, Inverted



I call this event pattern an inverted dead-cat bounce, or iDCB, because of the way prices move after a surprisingly good event. I did not break out the statistics in the usual tables because I used a computer to find matches in the stocks I track. With more than 30,000 samples in some cases, reviewing them all would be too cumbersome. Thus, the format of this chapter differs from the others.

Tour

What does an iDCB pattern look like? Figure 55.1 shows the first example, taken from a trade I made. The inverted dead-cat bounce pattern begins with a large, 1-day upward price move. In this example, the stock jumped 15% after the earnings announcement, gapping upward on high volume. The following day, it made a higher high, low, and close, but over the coming days, price dropped, returning to the launch point and then sinking moderately below it.

Here is my notebook entry for the trade: "2/6/04. I bought 400 shares, 300 filled at 30.30, 100 filled at 30.39. This is an earnings flag trade. I waited for a retrace before buying because of a weak general market. Price may retrace farther, but I expect a renewed climb. Downside is 50% retrace to 27.50–28. That is also the site of the August–November 2003 peaks. Expect a rise to 35. This could stall at 34 according to the point and figure chart. At 35, this goes up against a long-term down trend line from the March and July peaks in 2000. According to the 1-2-3 trend change rule, the stock is poised to move up. Price pierced the down trend line, retested the low, and is now breaking out to new highs."

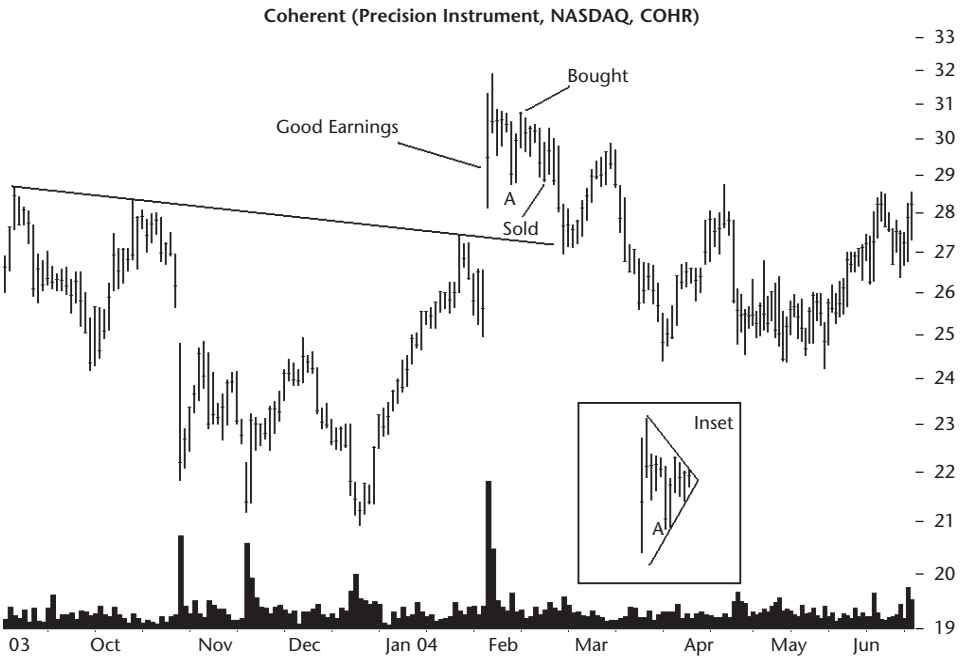


Figure 55.1 Good earnings propel the stock upward by 15%. Price makes a higher high the next day and then starts declining.

Let me explain the entry. This was supposed to be an earnings flag trade, but as you can see, the flag was a failure because price dropped instead of moving to new highs. Had I studied the iDCB at the time, I would not have traded this one. Why? Large down moves often follow large up moves.

Since the odds of a successful trade improve with a rising stock, industry, and general market, I waited for the market to get on board. The S&P 500 index started moving up a few days before I bought. A retrace to the 27.50–28 area would find support from prior peaks but would also fill the gap. A gap usually supports the stock—as it did in late February—but price tunneled through in March.

The 35-price target comes from the earnings flag projection. From the low the day before the large up move, price bottomed at 25.24 and then peaked at 31.88 for a height of 6.64. From the flag low at point A, 28.75, the target would be 35.39. I played it conservative and rounded it down to 35.

A 50% retrace of the up move in the flagpole would put the stock at 28.56, just above the high end of the gap, and just below point A. I find that Fibonacci retracement numbers (such as 38%, 50%, and 62%) come in handy to help determine support and resistance zones. You can see that price approached the 50% retrace mark as it made a low at point A and then moved higher.

Sometimes I check the point and figure (PF) chart to help determine where support and resistance zones are. The PF chart shows overhead resistance at 34, and on the price chart, a solid block appears at that price in March and April of 2002 (not shown in Figure 55.1).

The 1-2-3 trend change rule is beyond the scope of this book (see *Trading Classic Chart Patterns*, Wiley, 2002, for an explanation), but it says price has changed trend from down to up when it breaks a down-sloping trend line, retests the low but fails, and rises above a prior minor high. Those three criteria were satisfied when price gapped above a down-sloping trend line connecting the September and October peaks, as shown.

Here is my notebook entry for the sale: "2/12/04. The Dow was up 123 points yesterday, but this stock hardly moved. Today, it has broken out downward from a pennant. Time to cut the loss. I'll sell at the market open tomorrow. This stock did not do as I expected, so it's time to sell. 2/13/04. The stock sold at 29.255."

Since my trading success depends on the market helping push prices upward, when the stock fails to participate in a market rally, that is often a red flag. Coupled with the breakout from the pennant (see inset in Figure 55.1), that signaled a sell. One key rule with trading chart or event patterns is that if price does not do as you expect, then close out your position. I did just that and cut my loss to about $450, or 3.8%. If I held on, I could have ridden it down to the May low for a 20% loss.

Statistics

For this pattern, instead of showing large tables of numbers, I show graphs. Let me issue this warning up front. The following graphs show averages of thousands of samples. Your trade will probably not act like the profile. Still, all of the graphs suggest selling on day 2, when price makes a higher high. Whether you buy back in later depends on the situation and price action. Use common sense and your trading experience to execute correctly.

The first graph, Figure 55.2, shows the price profile of between 29,600 and 37,100 event patterns in which the high, low, or closing price moved more than 5%. I used about 250 stocks to collect the data from as early as January 1988 to June 2004. Not all stocks had data covering that period.

The figure is a frequency distribution of the average price change over time. The vertical axis shows the average climb as measured from low to low, high to high, or close to close between the day before the large move (called the *reference day*) to succeeding days up to a month later. For example, on day 1, the intraday low and closing prices were 7.8% higher than the day before, and the intraday high was 7.9% higher. The following day, all three price components moved higher with the intraday high topping out at 8.7%, the low was 8.5% higher, and the close was 7.9% higher than the reference day's high, low, and close, respectively.

What does the chart mean? If you own stock and it jumps over 5%, Figure 55.2 shows the *average* price behavior for the next month. After the initial move, expect a higher high, higher low, and higher close the following day.

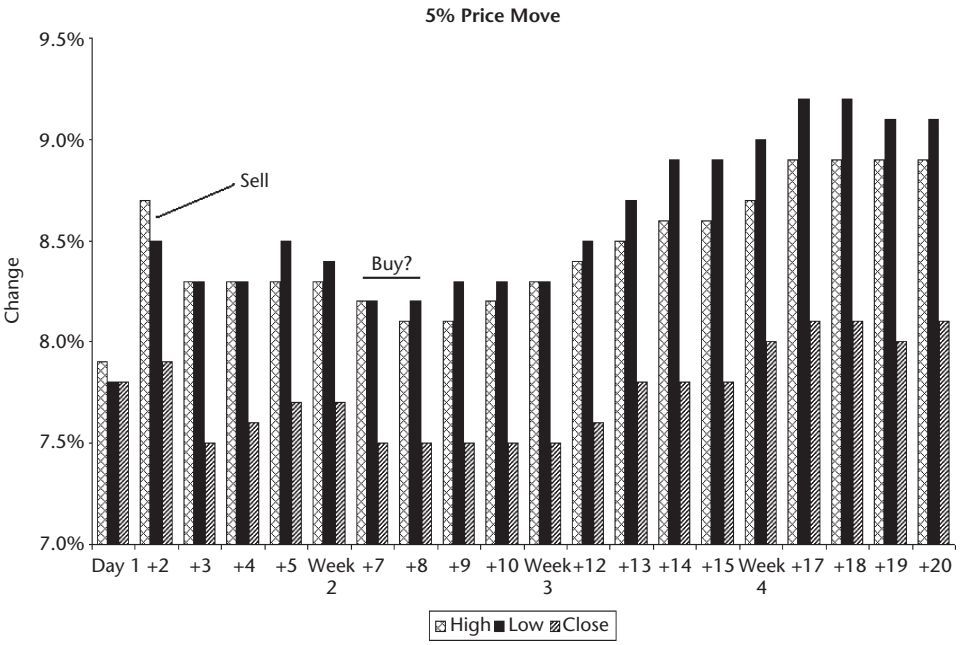


Figure 55.2 Price climbs for 2 days then drops and levels out before beginning a gentle climb.

That day is the time to sell. On average, price will drop in the coming sessions and will likely level out around the middle of week 2. That is when the intraday lows dip. Consider buying back in. Expect a shallow rise to begin in week 3 and continue upward into week 4.

Using the median instead of the average in the frequency distribution shows that the high price peaks on day 2 and then coasts downward until day 15 when it starts moving up. However, by the end of the month, the high price is still well below what it was on day 1. Another frequency distribution shows that 49% of iDCBs have a higher close on day 2. This percentage drops to 47% on day 3 but begins moving up on days 6 through 20. At month's end, 53% have higher highs.

In short, the data seem to indicate a sale on day 2 is the best course of action if you are a swing trader. For a position trader who holds a position for weeks, months, or even years, a 5% move may not warrant a sale. If price gives back all of its gains, they consider it no big deal. You may decide otherwise.

Figure 55.3 shows the price distribution for iDCBs in which price climbs at least 10%. I found between 9,300 and 11,500 samples qualifying in about 550 stocks from late 1987 to June 2004. Not all stocks covered the full range of data.

The profile is similar to that shown in Figure 55.2. Price climbs an average of 14.1% higher after the reference day and then makes a higher high (15.7% above the reference day) but closes at the same price. Day 2 is the day

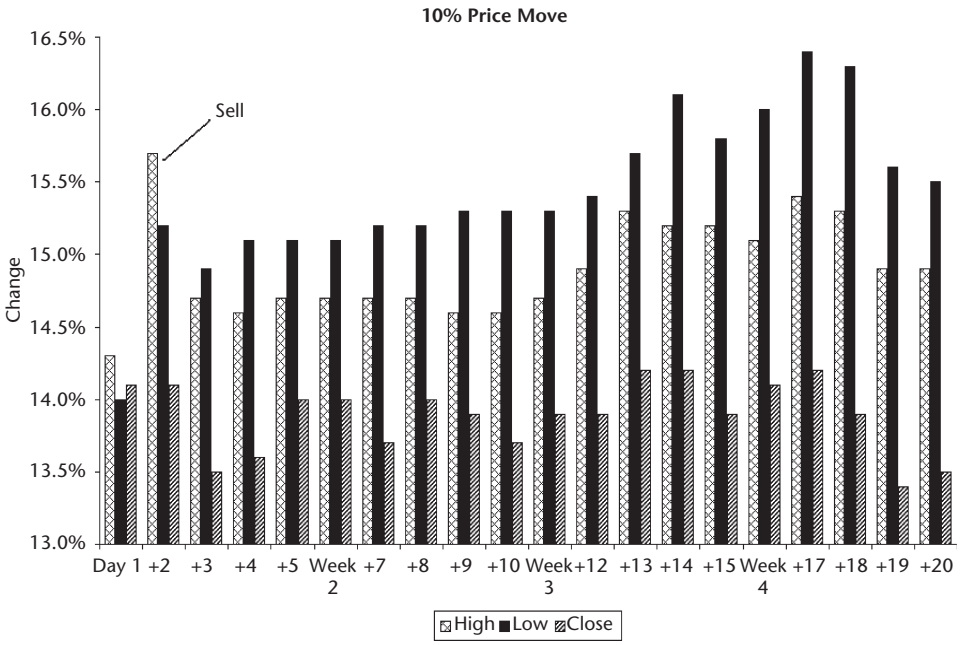


Figure 55.3 For price moves of 10%, the best time to sell is on the second day. That day represents the highest average high for the next month.

to sell as it shows the highest high for the coming month. Price does not climb back up to the average closing price until day 13, and by the end of the month, the close is below what it was at day 1 and 2. The intraday lows continue to rise, peaking near the middle of week 4. This finding suggests that once you sell, stay on the sidelines. With the intraday lows rising, the stock will only get more expensive.

The frequency distribution using the median high shows price peaking on day 2 and then dropping steadily until the end of the month. A third frequency distribution shows that 48% of the samples have higher highs on day 2. This percentage drops to 43% on days 4 and 5 then rises steadily until closing out the month at 50%, meaning that half the samples had intraday highs higher than day 1, and half were lower.

Figure 55.4 shows a more optimistic scenario. I used between 2,400 and 2,600 samples from 550 stocks covering January 1998 to June 2004. The difference in the sample counts is a result of my collecting data individually in the three components: high, low, and close. Many times, the closing price has more samples moving higher than the other components.

The figure shows the average price change for minimum price moves of 15% above the reference day. The chart suggests selling on day 2 as close to the intraday high as you can get, which may be the highest high for the coming month. Buy back in the next day near the intraday low (if you can figure out

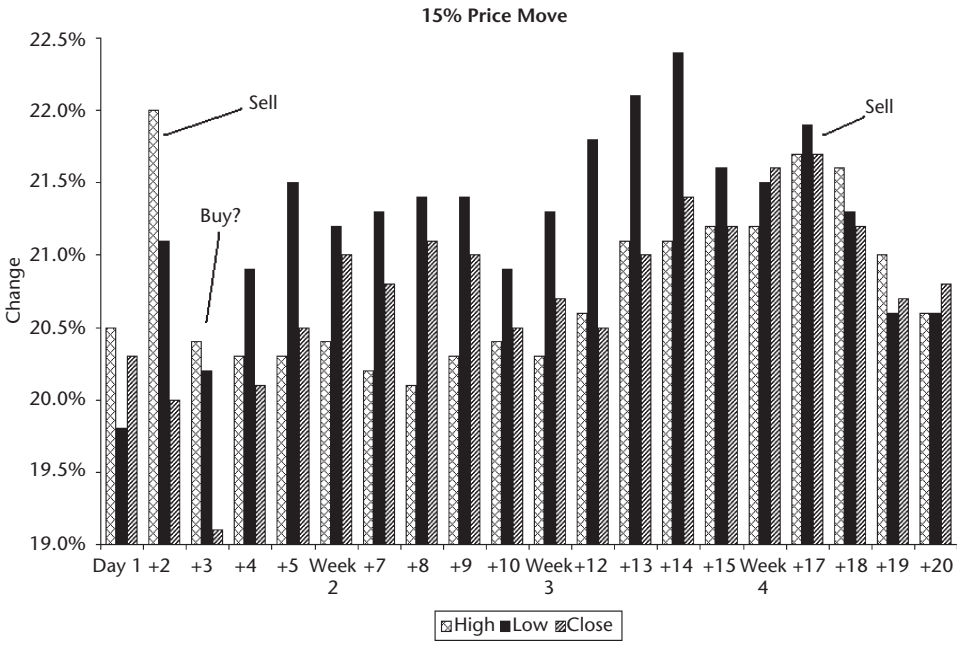


Figure 55.4 The chart shows price moves of at least 15%. Sell the second day near the high and buy back in during the middle of week 2. Ride prices higher into week 4.

how to do that) and then ride price upward until early in week 4. Sell then because price drops toward the end of the month.

The frequency distribution using the median price shows the intraday high peaking on day 1 and then dropping and bottoming on days 8, 10, 15, and 20. At month's end (day 20), the high price is substantially below that on day 1. Another frequency distribution shows a count of how often price makes a higher high above the high on day 1. It starts out at 46% and then drops to 40% on day 3 before climbing to 48% by month's end.

Figure 55.5 shows the price profile that used the fewest samples: between 1,000 and 1,300 covering 550 stocks from January 1988 to June 2004. Comparatively few stocks jumped at least 20% on any given day.

How do you use this information? On day 2, price reaches an average high 29% above the reference day's high, and then prices drop, closing lower at the end of day 3. If you can buy near the intraday low on day 3, consider doing so. Ride the stock up until early in week 2 (when intraday highs peak) or hold until the start of week 4 (high peaks again). Then sell. Price trends lower toward the end of the month.

Let me remind you that if you follow this advice, you might lose money. Selling on day 2 is a wise decision, but buying back in so soon may not be. The stock may continue to tumble. You may want to postpone buying until the start of week 3, or not at all.

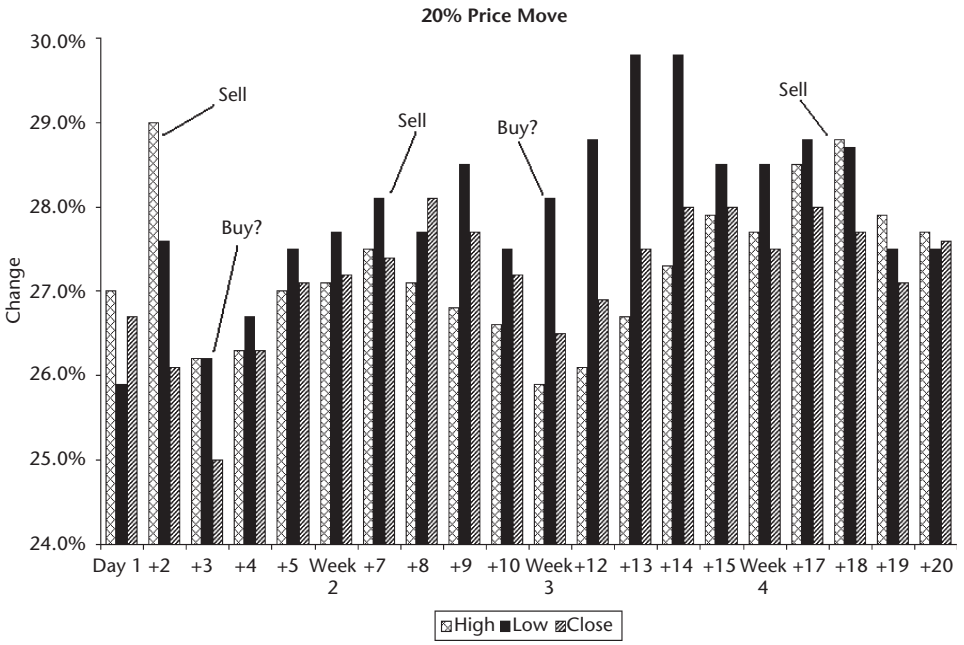


Figure 55.5 This graph shows price moves of at least 20%. Sell on day 2 and buy back in near the low on day 3. Hold the stock until the middle of week 4, and then sell.

A frequency distribution of intraday highs using the median instead of the average shows that price makes its highest high on day 1, drops until day 6, and then essentially moves horizontally until the end of the month. At month's end, the median high price is well below that posted on day 1. This behavior emphasizes the need to sell early.

A frequency distribution that counts the number of times price makes a new high above day 1 starts at 45% on day 2 and drops to its low, 37%, on days 3 and 4. Then it rises until finishing the month showing 47% with highs above day 1. The numbers suggest selling on the day that price makes a large move up and then looking elsewhere for another trade.

Trading Tactics

I bought 1,000 shares of Southwest Airlines for $15.81 a share. Less than 3 weeks later, on a Friday, the company announced that it reached a tentative accord with the flight attendants' union after 2 years of negotiations. The stock closed 8% higher on the news, at 17, giving me a profit of almost $1,200. Did I sell? No. I justified holding the stock because an 8% rise is nice, but still not enough when I am looking for 20% or 25%.

On the following Monday, the stock made a higher high but closed down 2% (16.64), as expected. It continued descending and eventually hit my stop at

15.41, cashing me out. I managed to change a potential $1,200 gain into a $430 loss. Oops. Now that I am a more active trader (to prevent such drawdowns), I know it is smart to take profit if price shoots up 5% or more.

Table 55.1 shows trading tactics for the inverted dead-cat bounce. I base the tactics on the graphs discussed in the Statistics section. Since the graphs represent *average* price changes, your results will vary. Before trading, ask yourself if you should sell a holding to preserve profits. Remember, capital gains taxes may be important, and if the general market is trending upward, you may decide to hold on for the long term. However, if someone sells you a legal dollar bill for 80 cents, consider taking it. Twenty percent rises are rare in stocks, so sell because price will likely go down in the coming days. You can always buy back in once price bottoms.

Measure the rise. Say a stock you own jumps from a closing price of 10 to 12, for a 20% rise. Consult Figure 55.5 to see the average profile for price action over the coming month. Whether your situation will pan out like that shown in the figure is anyone's guess. Still, consider the profile as you make your trading plan.

Rises: 5% to 20%. All four profiles (Figures 55.2 through 55.5) suggest selling the day after a large rise. You may want to put a sell order at the intra-day high price of the event day (day 1). For example, if price rises 10% and peaks at 20 but closes at 19, put a limit order to sell at 20 the next day and see if it hits. If price looks like it is peaking without reaching 20, change the limit order into a market order and get out. You may not reach the higher high on

Table 55.1
Trading Tactics

Trading Tactic	Explanation
Measure the rise	Measure the close-to-close difference from the reference day to the next day (the day price zips 5% to 20% higher). Consult the appropriate graph in the Statistics section for the average price profile or use the following tips.
Close-to-close price rise	
5%	Is a 5% move worth taking a profit on? Sell the day after the initial rise. Buy back in during week 2 for a rise that lasts through week 4.
10%	Sell the day after the initial rise. Do not buy back in, as price is likely to trend lower.
15%	Sell the day after the initial rise. For swing traders, consider the situation carefully before buying in near the low on day 3. Hold until early in week 4 when prices peak and then sell.
20%	Sell the day after the initial rise. For swing traders, consider buying back in near the low on days 3 or 11. Sell again early in week 2 or early in week 4. Prices trend down at the end of the month.

day 2, but you might be able to do better than the prior close. Remember, the frequency distribution says that fewer than half make a higher high the second day, so keep that in mind. If price looks like it has peaked on day 1, then sell. Do not wait for a higher high that may not happen on day 2.

Suppose you sell. What happens beyond that is usually stock, industry, and market related. If the stock market shoots up, chances are your stock will do well and post a higher high on day 2. Buy back in on weakness and watch the market, industry, and the stock closely. If price looks like it is peaking then sell. By *peaking*, I mean look for bearish chart patterns or indicators that show divergence (an indicator moves down forming lower lows, but the stock shows higher highs), failure swings (little M-shaped patterns at indicator extremes suggesting a short-term trend change), or overbought signals.

Let us take an example using the stock shown in Figure 55.6. First, measure the move. From a close on the reference day (the day "Bought" is pointing to in the figure), the stock closed at 14.70. The following day, it closed at 17.70, for a gain of 20%. Thus, Figure 55.5 shows the correct price profile. It says to sell on day 2 as close to the intraday high as possible, and that the high and low will be higher than the prior day, but the close is likely to be lower. That pattern means selling well before the market closes (at least an hour before because that is when the big boys start trading and activity picks up) to avoid the downward price trend leading to the close. In Figure 55.6, the stock

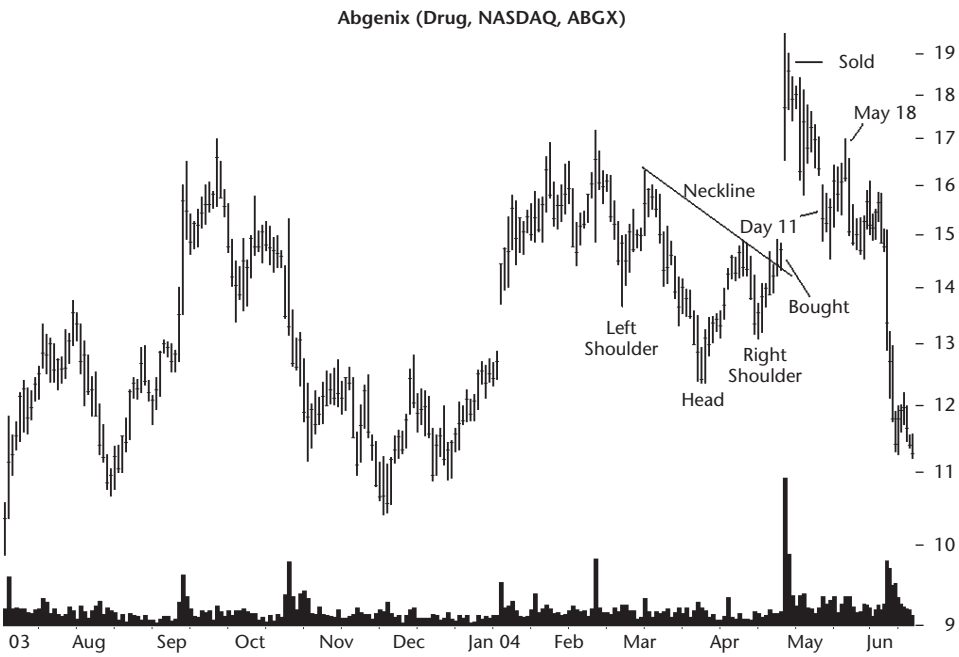


Figure 55.6 A head-and-shoulders bottom signaled a buy. The following day, price shot upward and the next day, the stock was sold for a 25% rise in 3 days.

did not make a higher high, but did make a higher low and close. Selling a day after the reference day turned out to be the best move, providing that your selling price was above the closing price (because the next day had a trading range above the prior day's close).

The profile says to buy if you can get in near the daily low on day 3 or 11. If you were successful buying at day 3 and sold early in week 2, you would have lost money as the stock trended down. If you bought on day 11 (see Figure 55.6) and sold early in week 4, that would have been a good call as price hit a minor high of 16.99 on May 18.

How did the profile do? The calls to sell on day 2 and early in week 4 were good calls as was the buy on day 11. The buy on day 3 was a losing trade, but not by much if you sold on May 18 (early in week 4).

This example should serve as a warning. Do not blindly follow investment advice. Do your own research. For example, how have other large up moves in your stock performed? Is the general market (use the S&P 500 index as a proxy) trending with you or against you? How are other stocks in the industry doing? If you are trading from the long side and other stocks in the industry and market are plunging, the chances of your trade performing as expected are diminished.

Sample Trade

Figure 55.6 shows an actual trade I made in the stock. Here is my partial notebook entry for the buy: "4/23/04. I believe the stock will rise to 16–17, and, if lucky, push through to make new highs. Earnings are due a month from today, so that gives me room. Downside is 12.94, stop, for a loss of 12%. Shares: 600 filled at 14.668, 100 at 14.67, and 300 at 14.66. Buy reason: Head-and-shoulders bottom, upward breakout. Mood: buoyant but rushed. I wanted to get this in before the close and it may be a hip shot. I'm depending on the head-and-shoulders to perform. Future market direction (guess): Hard to tell. I expect the market to rise for a few days until tagging an earlier ascending triangle then declining, forming a large double top."

Here is the explanation of my notebook entry. I show the head-and-shoulders bottom in the figure. Price crossed the down-sloping neckline, signaling a buy. The head-and-shoulders pattern is not as pretty as one would hope, because the shoulders are not symmetrical about the head in either price or time.

I scored this pattern according to my book, *Trading Classic Chart Patterns*, as a +3, meaning that there was a good chance—but no guarantee—that price would climb to the target of 18.59. The measure rule for head-and-shoulders predicted a price rise to 17.51. Price met both predictions the day after I bought.

I expected the stock to reach the old high of 16–17 and stall there but eventually push through. If the trade went against me, then a stop at 12.94 (just

below the round number 13) and below the right shoulder low of 13.08, would keep my loss to a rather large 12%.

I like to check when the next earnings announcement is due because I have learned not to trade within 3 weeks of the announcement (I just add 3 months onto the last announcement date or check a year earlier for a closer guess). Since the median hold time for my trading this year is 26 days (which is unusually short, but markets are volatile), following my typical hold time means I might sell just before the announcement. It also means that I might be buying as price declines into the earnings announcement. In many stocks, price will start dropping midway through the quarter—not always—but that is what I have noticed. Trading the stock a month before the earnings release I considered an acceptable risk.

I bought and the next day, the stock zoomed up 20%. I heard about it on the financial news that evening and took a closer look at the chart. I knew that a quick decline often follows a quick rise, so I decided to sell and protect my profit. Here is the notebook entry for the sale: "Date: 4/27/04. Shares: 1000, filled at 18.308. Sell reason: stock jumped three points yesterday on hype about cancer drugs. Mood: cautious. I expected the stock to give back almost all of its gains, but it was up this morning, coming down. A quick decline often follows a quick rise."

I sold well above the daily low but below the closing price. Still, I am happy with my 25% gain in three trading days. From that point, you can see what happened. In early June, the stock dropped 10% on good news about one of its cancer drugs in joint development with Amgen, putting the price well below the buy point.

I ended up having 3,611.79 reasons why I am glad I sold.

56

Earnings Surprise, Bad

RESULTS SNAPSHOT

Downward Breakouts

Event	The company announces earnings and the stock price drops.	
Reversal or continuation	Short-term bearish continuation	
	Bull Market	**Bear Market**
Performance rank	3 out of 5	3 out of 4
Break-even failure rate	31%	26%
Average decline	13%	17%
Change after trend ends	51%	37%
Volume trend	Usually heavy on the announcement day	
Pullbacks	41%	45%
Percentage meeting price target	69%	68%
Surprising findings	Works best in a bear market and a downward price trend. Select patterns near the yearly low. A bad quarter usually follows a bad quarter. Pullbacks hurt performance. Tall patterns perform better than short ones.	
See also	Earnings Surprise, Good; Flag, Earnings	

No investor or trader likes surprises, so when a company announces earnings, what does the stock do? In a bear market, 61% of the 918 earnings

announcements I looked at broke out *upward!* In a bull market, 43% of the 1,316 announcements I looked at broke out *downward*. The results surprised me, but market direction may have little to do with breakout direction.

In this chapter, I explore earnings announcements with downward breakouts only. I assumed that these were the bad earnings surprises. I also filtered the 2,234 announcements by those with intraday trading ranges that were wider than average.

The performance of what remained appears in the Results Snapshot. The event pattern usually acts as a short-term bearish continuation, not a reversal of the prevailing price trend. In many cases, the price trend leading to the pattern was down and so was the breakout. The break-even failure rate is high, 31% and 26%, for bull and bear markets, respectively. I consider anything above 20% to be unacceptable, so this event pattern is well out of the ballpark; trade it with care.

The decline is just a bit shy of other event patterns, averaging 13% and 17% for bull and bear markets. Once price reaches the ultimate low, it soars by 51% in a bull market and 37% in a bear market. If you can catch this turn, then you can make a lot of money.

On the announcement day, volume is heavy (above the monthly average). Pullbacks occur just over a third of the time (41% and 45% in bull and bear markets), which is somewhat less than the 50% return rate for other event patterns. Performance is also light with 69% and 68% of the stocks reaching their predicted price targets. Values above 80% I consider acceptable, but few patterns meet that benchmark.

Surprises are many but the notable ones are not really surprises at all. They confirm what many traders know. This pattern is bearish, so it works best in a bear market when the company's stock price is tumbling. The best performing patterns are those that appear within a third of the yearly low. Prices decline by 20%, on average. Finally, after examining over 2,000 patterns, I confirmed that a company having a bad quarter is likely to suffer in the next quarter as well.

Tour

Figure 56.1 shows a typical example of a well-behaved stock after an earnings announcement. Many times, the announcement is not startlingly bad, so price does not gap downward or make a large move. Instead, price drifts lower without a rush, staging a downward breakout. That is what happened in this example. Price kept sliding until reaching the ultimate low. Price resumed its descent in late February, eventually reaching a new low of 15.31.

From the breakout price of 43.75 to the ultimate low of 27.25, the decline measured 38%. That figure is well above the usual 17% decline in a bear market.

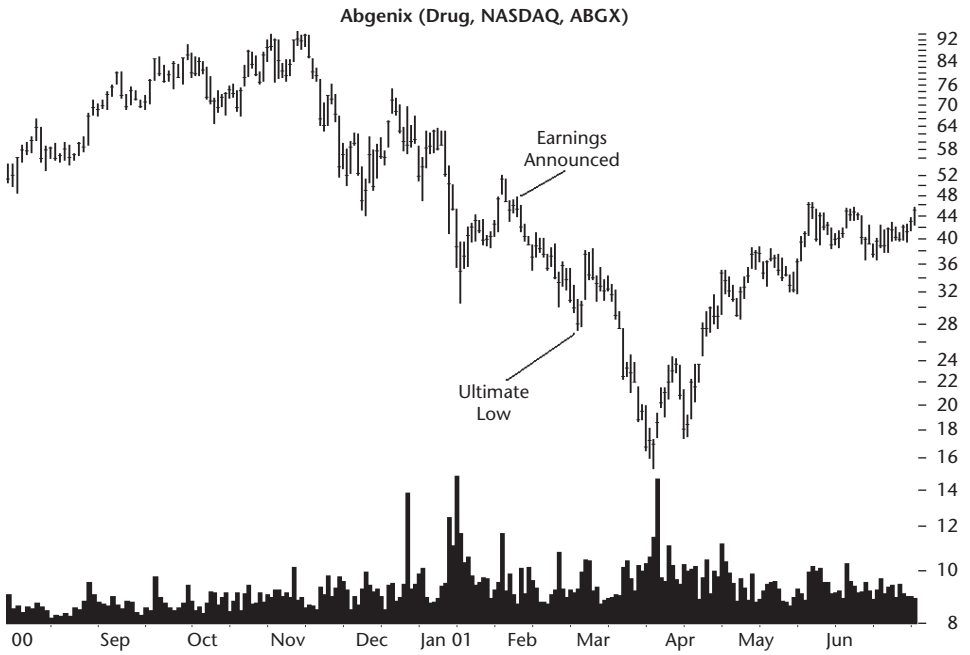


Figure 56.1 Price trends down to this earnings announcement, breaks out downward, and then continues lower.

Identification Guidelines

Table 56.1 lists identification characteristics of the patterns resulting from bad earnings surprises.

Falling price trend. Performance improves when you trade with the trend. Since we are dealing with downward breakouts, look for a falling price trend leading to the earnings announcement.

Earnings announced. Wait for the earnings announcement. If a quarterly earnings announcement is less than 3 weeks away, defer the trade. Why? Because few things in life hurt more than losing money when your aim is to make money. If you were to trade the stock ahead of the breakout, the break-

Table 56.1
Identification Characteristics

Characteristic	Discussion
Falling price trend	Look for the announcement to appear in a declining price trend, preferably in a bear market.
Earnings announced	The company announces earnings and the stock drops.
Breakout	Price must close below the intraday low posted on the announcement day.
Nearby support	Look for underlying support zones that might stop the decline.

out could be in the adverse direction and you would lose money. Wait for the announcement and then wait longer for the breakout.

Breakout. A breakout occurs when price closes below the intraday low posted on the day of the announcement. Only then should you consider placing a trade. Wait for the downward breakout because a bad announcement could send the stock soaring. Why? Because the market was expecting worse results from the company.

Nearby support. If you decide to short a stock after an earnings announcement, look for a support zone below where the stock is trading. This might be round number support or minor high/low support or any variety of other support mechanisms. If support is nearby, then look elsewhere for a more promising trade. It may be that the stock plummets through the support zone (and if support is less than 5% away, that will usually be the case), but why chance it?

Consider Figure 56.2 as an example. A falling price trend was in place before the earnings announcement, which suggested a continuation of the downward trend. On the day of the announcement, price moved in a large range, from 26.30 to 19.50, with a close at 21.90. After that, price rebounded somewhat and then curled down, eventually breaking out when it closed below the intraday low of 19.50. That was the safe time to short. Price moved horizontally for about a month before tumbling for 3 days and finding the ultimate

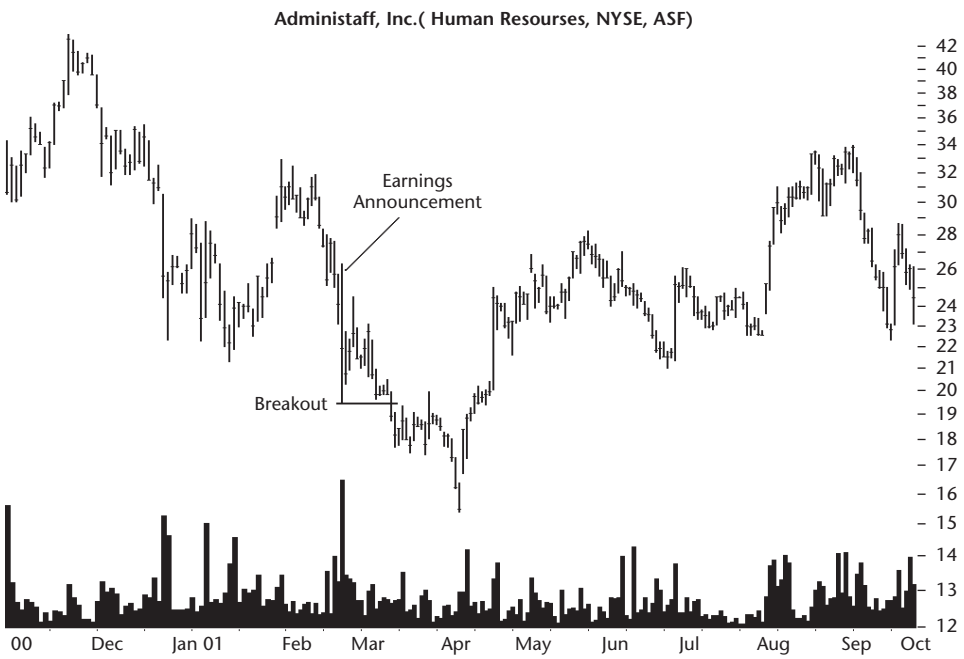


Figure 56.2 Price has a large trading range on the earnings announcement. Eventually, price closed below the intraday low, posting a breakout.

low. The decline from the breakout to the low measured 21% in a bear market, slightly better than the average 17% decline.

Focus on Failures

With a break-even failure rate well above 20%, this pattern is not easy to trade profitably. One reason for the poor performance may be support below the pattern. Consider Figure 56.3. Price breaks out downward the day following the announcement. On that day, the trading range was wide and the close was near the daily low. This scenario suggested a lower low the next day, but the stock closed up sharply and then continued trending higher on following days.

The support zone in late 2002 stopped the decline in late January and April. Nearby support in early April suggested price might stop there, too.

Another clue to failure is a rising price trend. From the March low, price climbed quite rapidly for a week and then began rounding over. At the time of the earnings announcement, price looked like a spiky head-and-shoulders top (or a diamond), but the HST never confirmed. If you can, always trade with the prevailing price trend. Since the March price trend was up, skip this downward breakout.

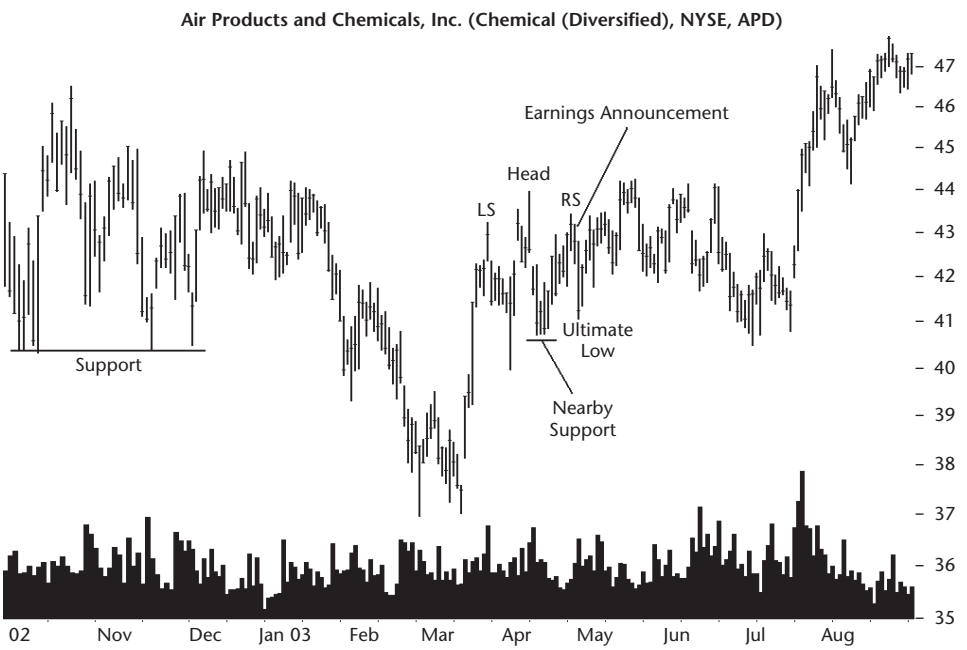


Figure 56.3 Price broke out downward, found support, and resumed rising. Avoid taking a bearish position in a rising price trend.

Statistics

Table 56.2 shows general statistics for this event pattern. I looked at just over 100 stocks beginning from early 1995 to mid 2003. Not all stocks had earnings announcements, and I used only those with downward breakouts with an *intraday trading range above the average range of the prior month.* These filters narrowed the 2,234 patterns to just 726. When the intraday trading range was twice or three times the average, the average decline improved (meaning prices declined farther) with lower failure rates. The wider the intraday trading range the better the performance.

Number of formations. The table shows that most of the earnings announcements with downward breakouts appeared in bull markets. This finding is not surprising as the bull market duration was substantially longer than the bear market.

Reversal or continuation. Most of the patterns acted as continuations of the prevailing price trend. Since the breakout is downward, select patterns in a downward price trend. They perform slightly better than reversals.

Average decline. The average decline matches the average posted by all event patterns as a group. With declines so meager, do you really want to trade this one? If the answer is yes, then find additional reasons to short the stock.

Declines over 45%. As if to emphasize how poorly this pattern performs, no more than 7% of the patterns I looked at dropped more than 45%. Yes, the 45% benchmark is a tough one to meet for bearish patterns, but the poor showing suggests you would do better looking for a different type of event pattern.

Change after trend ends. Once price reaches its ultimate low, it rebounds 51% in a bull market and 37% in a bear market. I like to see rebounds of 60% in a bull market, but for event patterns, a 51% rise is a good showing. If you can determine when the trend changes from down to up, buy the stock and ride the wave upward.

Table 56.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	450	276
Reversal (R) or continuation (C)	189 R, 261 C	111 R, 165 C
R/C performance	–12% R, –13% C	–16% R, –17% C
Average decline	13%	17%
Declines over 45%	13 or 3%	20 or 7%
Change after trend ends	51%	37%
Busted pattern performance	39%	25%
Standard & Poor's 500 change	–2%	–6%
Days to ultimate low	28	25

Note: Minus sign means decline.

Busted pattern performance. If price drops less than 5% and then begins rebounding, consider buying the stock. In a bull market, the resulting rise averages 39% and in a bull market, it is 25%. Since the numbers are well below what is posted after the trend ends, there is reason for caution. The rise may not be as substantial as you hope. Use stops to protect your positions.

Standard & Poor's 500 change. In both bull and bear markets, the S&P 500 index dropped from the breakout to the ultimate low. That is good news if you believe a falling tide lowers all boats. The larger decline in a bear market that itself dropped 6% helped beat the 13% decline in a bull market (which dropped 2%).

Days to ultimate low. It took about a month for price to reach the ultimate low. Notice that the bear market decline is shorter than the bull market and yet the average decline is higher (17% versus 13%). Thus, the bear market decline must be steeper than the decline in a bull market.

Table 56.3 list failure rates for the pattern. For bull markets, almost a third (31%) of the patterns fail to decline more than 5%. That is huge! Half turn around before declining 10%. Patterns in bear markets do better. A quarter (26%) drop less than 5%. Over half decline less than 15%.

As you can see in the table, the failure rates start out high and get worse, quickly. With half the patterns declining just 10% to 15%, does it make sense to trade this pattern?

Table 56.4 shows breakout- and postbreakout-related statistics for this event pattern.

Formation end to breakout. In both markets, price closed below the lowest low in the pattern within a week. That timing is about average for event patterns.

Yearly position. Where in the yearly price range does the breakout occur? Most often, the bad earnings surprise occurs near the yearly low. In bull markets,

Table 56.3
Failure Rates

Maximum Price Decline (%)	Bull Market	Bear Market
5 (breakeven)	138 or 31%	73 or 26%
10	230 or 51%	123 or 45%
15	302 or 67%	156 or 57%
20	347 or 77%	186 or 67%
25	377 or 84%	206 or 75%
30	406 or 90%	224 or 81%
35	420 or 93%	238 or 86%
50	442 or 98%	264 or 96%
75	450 or 100%	275 or 100%
Over 75	450 or 100%	276 or 100%

Table 56.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	4 days	5 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L36%, C32%, H32%	L44%, C34%, H22%
Percentage decline for each 12-month lookback period	L14%, C11%, H13%	L20%, C16%, H14%
Pullbacks	41%	45%
Average time to pullback ends	11 days	11 days
Average decline for patterns with pullbacks	12%	15%
Average decline for patterns without pullbacks	14%	18%

the range splits almost evenly. In bear markets, those stocks trading near the yearly high are the least likely to issue a bad earnings report. That makes sense. If investors sense trouble at the company, they punish the stock. Then, the company confirms what everyone knows: that they are having trouble.

Yearly position, performance. Where do the best performing patterns occur? Again, bull markets split evenly but the trend is clear. In both bull and bear markets, those earnings announcements with breakouts within a third of the yearly low perform best. Bull markets show average declines of 14%; bear markets do better with declines averaging 20%.

Pullbacks. A little less than half the time, the stock pulls back to the breakout price. This finding suggests that you not depend on a pullback to open a short position or add to an existing position. A pullback might not occur.

It took 11 days for price to return to the breakout price after a pullback, which is about average for all event pattern types. When a pullback occurs, it robs downward momentum and performance suffers. For example, when a pullback happens in a bull market, price drops an average of 12%; without a pullback, the drop measures 14%.

Table 56.5 shows a frequency distribution of the days to the ultimate low. For both markets, almost half (47% to 48%) of the patterns reached the ultimate low in less than a week. In a bull market, 67% (the sum of the 7, 14, and 21 day columns) reach the low in less than 3 weeks. This finding suggests that you should be ready to take profits quickly.

Table 56.5
Frequency Distribution of Days to Ultimate Low

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	48%	8%	8%	6%	7%	3%	2%	2%	4%	1%	11%
Bull market	47%	13%	7%	5%	4%	4%	4%	3%	1%	1%	11%

Table 56.6
Size and Volume Statistics

Description	Bull Market	Bear Market
Tall pattern performance	–14%	–20%
Short pattern performance	–12%	–15%
Median height as a percentage of breakout price	5.01%	6.15%
Heavy announcement day volume, performance	–12%	–17%
Light announcement day volume, performance	–14%	–14%

Note: Minus sign means decline.

Notice the slight uptick in a bear market around the end of the month (7% reach the ultimate low then). I have seen this behavior in other patterns. A month after the event, slightly more stocks reach the ultimate low and start rebounding. When trading this pattern, be especially careful a month after the breakout.

Table 56.6 shows size and volume statistics.

Height. Do tall patterns perform better than short ones? Yes. The largest difference is in a bear market as price dropped 20% when the intraday trading range on the announcement day was wider than the median (as a percentage of the breakout price). In comparison, short patterns dropped just 15%.

For best performance, select patterns taller than the median. In fact, when the intraday trading range on the announcement day was 2 or 3 times that shown by the 1-month average, the pattern tended to outperform (an average of 16% decline in a bull market and 21% in a bear market). Select unusually tall patterns.

Announcement day volume. Conventional wisdom suggests that high volume pushes price farther. Table 56.6 does not show breakout volume, but announcement day volume. On announcement days when volume was above the 1-month average in a bear market, price dropped 17%. This finding compares to a drop of 14% when volume was below average. For bull markets, the results flipped. Event patterns with below average announcement day volume tended to do better.

Trading Tactics

Table 56.7 shows trading tactics should you decide to trade this pattern.

Sell signal. If you own stock in a company and it issues an earnings report, what should you do? If the breakout is upward, then you are set. Sit tight and watch the stock rise. (Refer to Chapters 57 and 59.)

If the breakout is downward, then the decision becomes more difficult. In a bear market, consider selling because price may tumble 17%, on average. If the stock gaps down but the gap is small, it may close in a few days (an area gap). If the gap is wide, then you already have a loss or diminished profit. The

Table 56.7
Trading Tactics

Trading Tactic	Explanation
Sell signal	For intermediate- or long-term holders, do nothing, as the decline is likely to be small. For swing traders, consider selling immediately to minimize the loss. If price gaps down and the gap is small, price may retrace the next few days and cover the gap.
Sell short signal	In a bear market, wait for a close below the pattern's low and then short the stock. It may bottom in a week, so watch it closely. Use stops to protect your profits.
Measure rule	Used to predict a price target. On the announcement day, subtract the intraday low from the high, and subtract the difference from the intraday low. The result is the target price. Price hits the target 69% of the time in a bull market and 68% in a bear market.
Wait for confirmation	Traders can react to an announcement by pushing price in any direction. Thus, wait for the confirmation—a close below the intraday low before trading the event pattern.

stock may dead-cat bounce on you, so read Chapter 54. Wait for the bounce and then sell as price rounds over at the top just before a renewed decline.

Usually the decline from this pattern is not severe (see Table 56.3 to see how many patterns fail to drop far). If you can stomach the loss, then hang in there, especially if it is a bull market and price is trending upward. However, sometimes the pattern acts as a reversal of the uptrend. Sell immediately or wait for a correctly positioned stop loss to take you out of an existing position.

Remember, changes that affect earnings usually take longer than a quarter to fix, so if the company disappointed this quarter, there is a good chance it will do so again next quarter. I verified this prediction by looking at 1,963 earnings announcements. There were 866 *consecutive* earnings announcements with upward breakouts and 582 with downward breakouts (the pattern acted as a continuation of the price trend). In 515 additional cases, the breakout direction flipped from down to up or up to down from quarter to quarter (price reversals). Thus, 74% of the earnings announcements (866 + 582 out of 1,963) follow announcements having the same breakout direction. If one quarter is bad, there is a 74% probability that another bad quarter will follow.

Sell short signal. Performance from this pattern is poor, so I suggest you look for other event patterns to short. If you have a compelling situation, then review the "For Best Performance" section. The stock should be traded in a bear market and the price trend leading to the announcement should be downward. When price closes below the intraday low posted on the announcement day, then that is the sell short signal. Watch the stock closely as half the patterns bottom in the first week. Lower your stop as the stock declines. Keep an eye on the stock 4 to 5 weeks into the trade as price sometimes rebounds then.

Measure rule. How far will price drop? Pretend that a stock has an intraday high of 40 and a low of 38. The measure rule computes the pattern's height and then applies it to the breakout direction. In this example, the height is 2 (40 – 38) and the target price is 36 (38 – 2). Price reaches the target almost 70% of the time. This figure is below the 80% I like to see, so be conservative in your target estimate.

Wait for confirmation. Since the breakout direction is unknown until it happens, wait for price to close below the intraday low posted on the day of the announcement. When that happens, it confirms that you have a valid pattern and it signals a trade.

Sample Trade

How do you trade a bad earnings surprise? Look at Figure 56.4 for an example. In February, price tops out (point 1) after a sharp rise from the December low. Price moves horizontally for several months, forming a flat support zone (the confirmation line). As is often the case, price climbed to the level of the old high (point 2) and met resistance. The earnings announcement the day after the peak sent price skidding.

How low could we expect it to go? On the announcement day, the intraday high was 61.56; the low was 58.75. The measure rule predicted a decline to at least 55.94. Price reached the target just two days after the announcement.

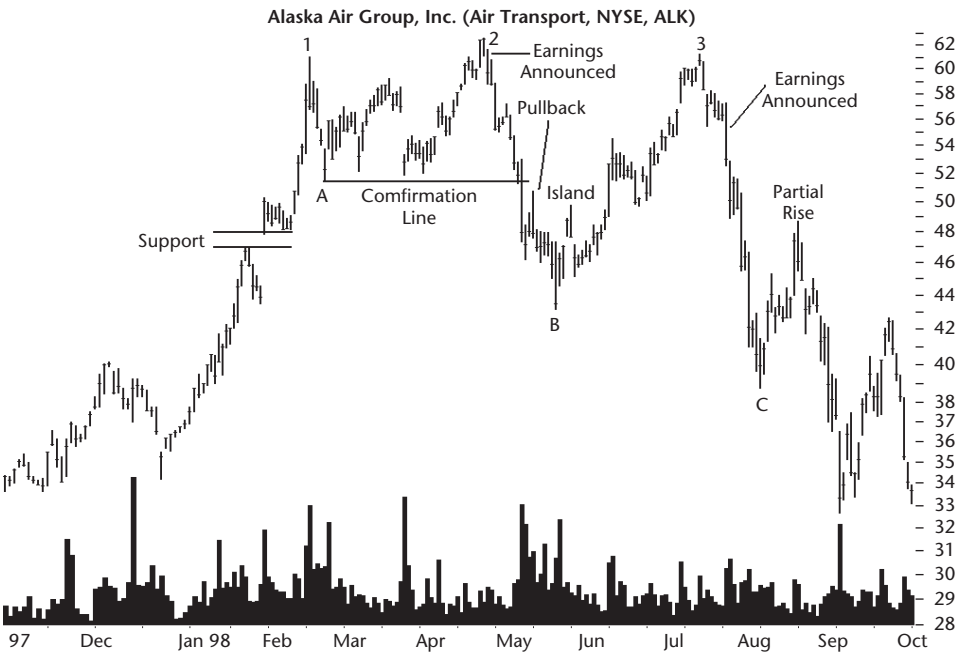


Figure 56.4 A double top forms and price tumbles. A second downward breakout from an earnings announcement confirms that a bad quarter follows a bad quarter.

If you shorted this stock, you could expect price to tumble to the confirmation line and stall there. Why? Because on four prior occasions, that is what happened (beginning in February and ending in March). If I saw price begin to rebound near that zone, I would cover my short.

Instead of stalling at the confirmation line, price confirmed the double top by closing below the line. The measure rule for the Adam & Eve double top suggested a decline to 40.38, which is the height of the double top subtracted from the price level of the confirmation line.

The mid-January price gap was another support zone. Since price plunged through the confirmation line, I would expect support at the January zone. For a week, that is what happened. Price returned to the confirmation line in a 1-day pullback and then struggled lower on declining volume.

When do you cover the short? I would be worried that price was climbing again after the small island on high volume in late May. The volume spike suggests renewed interest in the stock. I would have covered there.

As you can see, price fell short of the double top measure rule prediction (40.38) by dropping to a low of only 43.13. Notice the second earnings announcement (in July) that sent price lower. Remember that a bad quarter usually follows a bad quarter.

The three tops (1, 2, and 3) compose a triple top or a broadening formation, right-angled and descending (bottoms A, B, and C) with a partial rise in August, suggesting a downward breakout. A downward breakout is what happened in early September.

For Best Performance

The following list includes tips and observations to help you select better performing patterns. Consult the associated table for more information.

- Review the identification guidelines for correct selection—Table 56.1.
- Look for patterns in a downward price trend—Table 56.1.
- The pattern usually acts as a continuation of the prevailing price trend, so trade with the trend—Table 56.2.
- Trade this pattern only in a bear market for the largest average decline —Table 56.2.
- Failure rates start high and climb. For better performance, look for a wider intraday trading range (2 times or 3 times the range of the 1-month average) on the announcement day—Tables 56.3 and 56.6.
- Select patterns trading within a third of the yearly low—Table 56.4.
- Avoid pullbacks; look for underlying support that might cause a pullback—Table 56.4.

- Expect a quick but shallow decline. Almost half the patterns bottom in less than a week—Table 56.5.
- Select tall patterns—Table 56.6.
- The breakout direction will be the same from quarter to quarter 74% of the time. Thus, a bad quarter usually follows a bad quarter—Table 56.7.

57

Earnings Surprise, Good

RESULTS SNAPSHOT

Upward Breakouts

Event	The company announces earnings and the stock price rises.	
Reversal or continuation	Short-term bullish continuation	
	Bull Market	**Bear Market**
Performance rank	5 out of 6	5 out of 5
Break-even failure rate	29%	28%
Average rise	24%	14%
Change after trend ends	–27%	–31%
Volume trend	Usually heavy on the announcement day	
Throwbacks	41%	44%
Percentage meeting price target	76%	74%
Surprising findings	Almost half the patterns fail to rise more than 10%. Patterns near the yearly low perform best. Throwbacks hurt performance. Tall patterns perform better than short ones.	
See also	Earnings Surprise, Bad; Flag, Earnings	

How many times have you heard a company announce good earnings and the stock drops? This pattern reflects the opposite of that situation. A company announces earnings that surprise the market. Traders like what they hear and buy the stock, pushing it higher. That is what a good earnings surprise (GES) is all about.

GES acts as a short-term bullish continuation. The failure rate is high, almost 30%, and I consider anything above 20% to be unacceptable. Most well-behaved chart patterns have single-digit break-even failure rates, but event patterns do much worse.

The average rise is in line with other event patterns. If you wait for price to reach the ultimate high and then short the stock, the average decline of 27% in a bull market and 31% in a bear market is mouthwatering. Unfortunately, you have to short at the exact peak and cover at the exact bottom, which is impossible to do consistently.

Of the surprising findings, there are many. Almost half of the GES patterns fail to rise more than 10%. That finding should serve as a wake-up call. You can improve your chance of success by selecting patterns with upward breakouts near the yearly low, avoiding patterns with nearby overhead resistance (to avoid a throwback), and selecting tall patterns. I explore these combinations later in the statistics section of this chapter.

Tour

What does a typical GES pattern look like? Figure 57.1 shows two examples. The July announcement occurred in a downward price trend. Even though the breakout was upward, the rise lasted a week before collapsing. Then price recovered

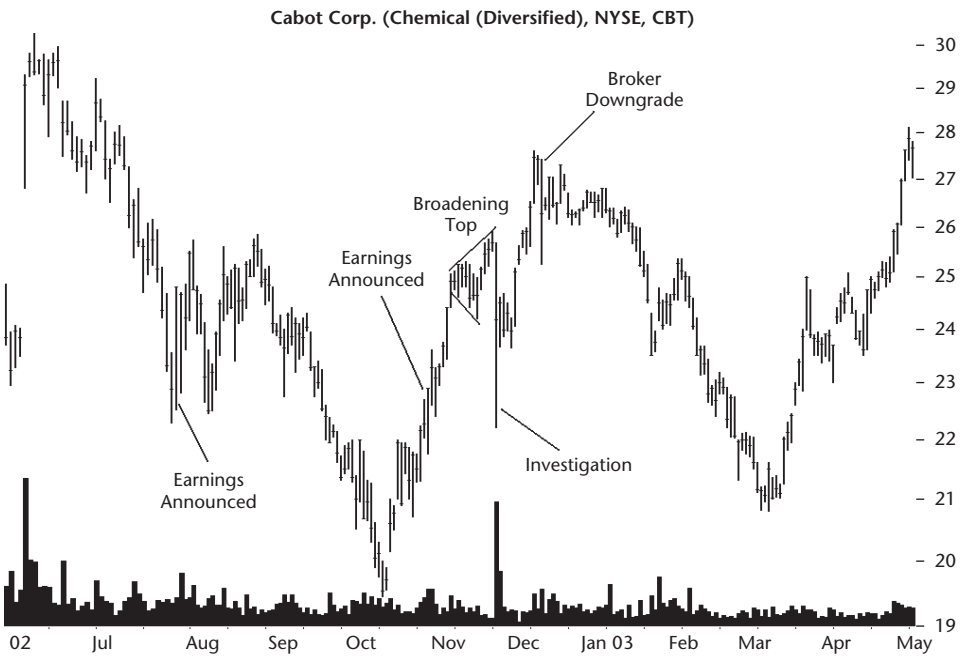


Figure 57.1 The July announcement occurred in a downward price trend. In October, the announcement sent price higher, but for less than 2 months.

and made a new minor high in August before resuming the downward trend. The lesson of this announcement is easy: Do not buy if price is trending down.

The stock performed better after the October announcement. Price climbed in a straight-line run until encountering overhead resistance and forming a broadening top. Then price tumbled in mid-November on news that U.S. and European regulators were reviewing documents as part of a joint investigation into possible price fixing in the carbon-black industry. After that, the stock recovered and made a new high. Then a broker downgraded the stock and that was enough to send price sliding.

Identification Guidelines

Table 57.1 lists identification guidelines for the GES pattern.

Rising price trend. With all chart and event patterns, you want to trade with the prevailing price trend. Since we are looking for an upward breakout (after all, this is a *good* earnings surprise, not a bad one), search for a rising price trend. That way you can ride the wave of a rising tide. It also helps to buy in a bull market.

Earnings announced. When the company announces earnings, price may move up sharply that day or the next if the announcement came after markets were closed (sometimes price gaps upward). You can find earnings announcements in the newspapers, on the Internet, or on financial television programs. Announcements usually occur quarterly, so add 3 months to the last release to estimate the date of the next release.

Large intraday range. To be included in the study, the announcement day's trading range needed to be larger than the 1-month average. The larger the day's price range, the better the performance (higher average rise with a lower failure rate), on average.

If price shoots upward on the announcement day and continues rising for several days, price will probably pause and form an earnings flag. (See Chapter

Table 57.1
Identification Characteristics

Characteristic	Discussion
Rising price trend	Look for the announcement to appear in a rising price trend, preferably in a bull market.
Earnings announced	The company announces earnings. Price may have a wide trading range or, if the market is closed, price may gap upward the next trading day.
Large intraday range	Look for a large intraday price range on the announcement day, a range that is larger than the 1-month average.
Breakout	Upward breakouts only: Price must close above the intraday high posted on the announcement day.

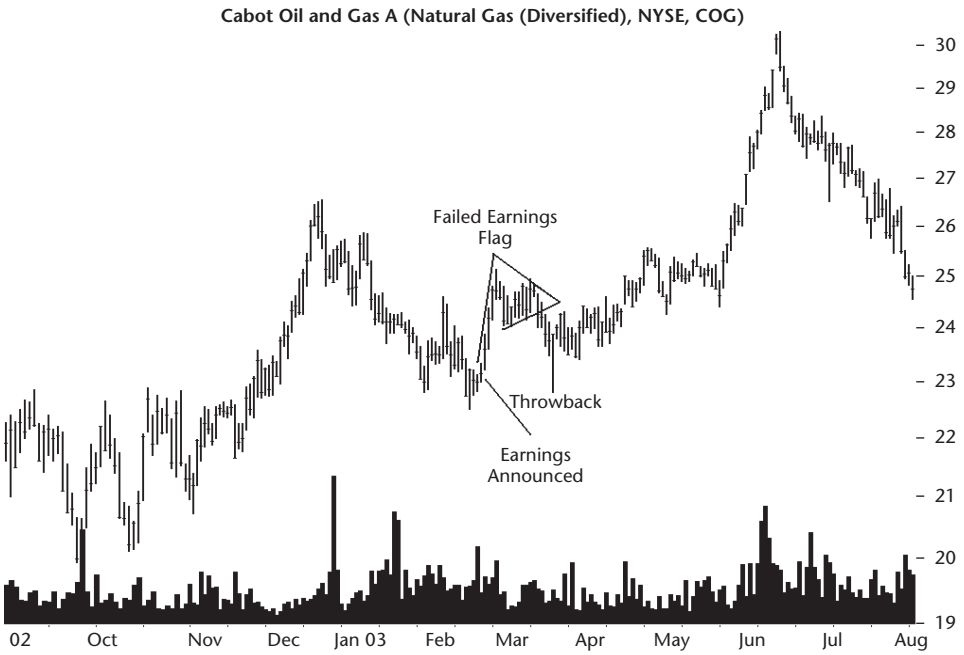


Figure 57.2 After a short-term decline, the earnings announcement acts as a reversal, sending price higher. A throwback drops the stock to the breakout price before recovering. This is a failed earnings flag pattern because price breaks out downward from the flag portion of the pattern.

59 for tips on how to trade that pattern.) With the GES pattern, earnings are like hitting a single, not a home run. Price typically does not zip upward in a straight-line rise. Instead, the rise is more sedate.

Breakout. I only looked at upward breakouts. A breakout occurs when price closes above the intraday high posted on the announcement day.

Figure 57.2 shows an example of an earnings announcement acting as a reversal. After price declined for several months, the earnings announcement seemed to breathe life into the stock. Price jumped upward, but ran out of energy in a week. It then headed down and completed a throwback to the breakout price. Over the next several months, price climbed to just above 30, a rise of 30% from the breakout price.

This GES resembles an earnings flag pattern. Price makes a sharp, straight-line run and then pauses. Unfortunately, price breaks out downward from the pennant portion of the earnings flag, invalidating the pattern.

Focus on Failures

Pretend you own stock in CDI, pictured in Figure 57.3. It announces earnings in late April. Do you hold onto the stock, buy more, or sell? Answer: Sell. Why? Because price tumbles after the announcement—as shown in the figure—but what do you do if you cannot see the future?

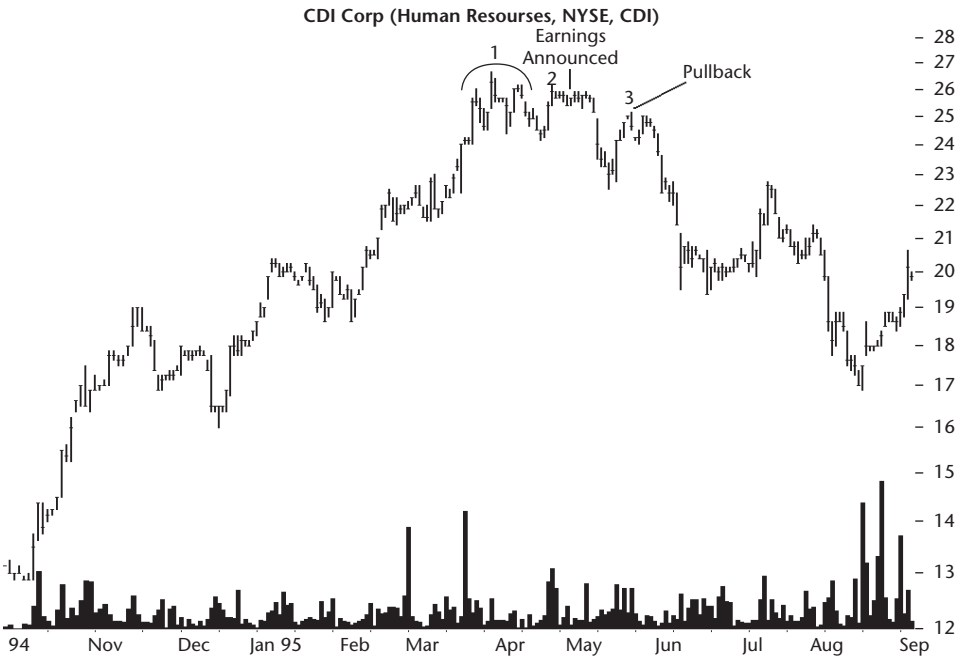


Figure 57.3 Price breaks out upward from this earnings announcement but enters an extended decline. Why?

A few technical clues give hints on how to trade this announcement. First, the earnings announcement did not send price moving much higher. It flatlined like somebody dying on the emergency room table. If earnings were truly better than expected, price would have moved up sharply.

Second, peak 1 is higher than peak 2, and peak 2 is above peak 3. Those three peaks represent a three falling peaks chart pattern—suggesting a bearish trend change. Peak 1 is also a bearish head-and-shoulders pattern. Paying attention to the surrounding price action would clue you in to the weakness of this situation.

Statistics

Table 57.2 shows general statistics for the GES pattern. I looked at just over 100 stocks with the earliest announcement occurring in January 1995. I used the identification guidelines listed in Table 57.1 to sift through the announcements. Table 57.2 shows only those patterns with upward breakouts and with an intraday trading range larger than the 1-month average.

Number of formations. I uncovered roughly the same number of patterns in both markets, suggesting that more positive earnings surprises occur in a bear market (because the bear market was shorter). This suggestion may not be true because not all stocks contained quarterly earnings announcements (a

Table 57.2
General Statistics

Description	Bull Market	Bear Market
Number of formations	393	309
Reversal (R) or continuation (C)	152 R, 241 C	144 R, 165 C
R/C performance	24% R, 24% C	14% R, 13% C
Average rise	24%	14%
Rises over 45%	88 or 22%	25 or 8%
Change after trend ends	–27%	–31%
Busted pattern performance	–22%	–27%
Standard & Poor's 500 change	5%	1%
Days to ultimate high	69	40

Note: Minus sign means decline.

limitation in the wimpy database I used), but it is a good guess. Consider that in a bear market, no one expects a good earnings report, so expectations are low. Thus, it is easier to surprise.

Reversal or continuation. The GES pattern acted as a continuation of the prevailing trend (57% of the time), not a reversal. Only in a bear market does a reversal outperform, and that is by one percentage point.

Average rise. The average rise is higher in a bull market than a bear market, as you would expect. It suggests you trade the GES pattern in a bull market.

Rises over 45%. Need I say that there are few rises over 45%? The bull market number, 22%, is almost triple the bear market tally, but still well below what other chart patterns do. On the other hand, for an event pattern, it holds up well when compared to other event patterns.

Change after trend ends. Once price reaches the ultimate high, it tumbles between 27% and 31%, depending on the market. If you can determine when the trend changes from up to down, then short the stock and ride it lower. Selling short is like rafting class 5 rapids: only the experienced should attempt it.

Busted pattern performance. If price rises less than 5% and then tumbles, the drop averages between 22% (bull market) and 27% (bear market) as measured from the highest high after the breakout to the ultimate low. If you were to trade busted patterns, your average return would be less because you should wait for price to breakout downward. If you do trade a busted pattern, do so in a bear market, preferably in a weak industry (other stocks are doing poorly).

Standard & Poor's 500 change. From the day of the breakout to the ultimate high, the S&P rose 5% in a bull market and 1% in a bear market. This finding compares to a price rise of 24% and 14% for the GES pattern over the same period.

Days to ultimate high. It took just over 1 month (bear market) to 2 months (bull market) to reach the ultimate high, on average, but a startling number top out in the first few weeks.

If you crunch the numbers, you will find that the slope of the rise in a bull market matches the rise in a bear market, which is unusual as bear markets typically rise faster.

Table 57.3 shows failure rates for the GES pattern in bull and bear markets. The break-even failure rate is too high, as I consider 20% the maximum acceptable. Twenty-nine percent of the patterns in a bull market and 28% of bear market patterns fail to rise just 5%. Almost half fail to rise 10%. Do not expect large gains from this pattern.

The numbers suggest that this pattern may be useful for swing traders, but others should avoid it. Why? Let me give you an example. If price rises by just 5% after a GES breakout in a bull market, it then tumbles at least 20% (by definition). Just to break even, 62% of the bull market patterns will fail to rise at least 20%. If you miss selling near the top, you could be taken to the cleaners.

Instead, use this pattern as just one tool of many in your trading toolbox. Think of it as confirming evidence of a bullish trade.

Table 57.4 shows breakout- and postbreakout-related statistics for this event pattern.

Formation end to breakout. For both bull and bear markets, it takes price 5 days to reach the breakout, on average. This movement may sound quick, but all price has to do is close above the intraday high posted on the announcement day.

Yearly position. Most GES patterns had breakouts within a third of the yearly high. Apparently, good news pushes the stock to new highs. Few surprisingly good earnings occur near the yearly low. Why? If traders drive by their favorite retailer and see a parking lot full of cars, they can expect good earnings. That anticipation pushes price higher. When the GES announcement comes,

Table 57.3
Failure Rates

Maximum Price Rise (%)	Bull Market	Bear Market
5 (breakeven)	115 or 29%	86 or 28%
10	188 or 48%	147 or 48%
15	225 or 57%	201 or 65%
20	244 or 62%	227 or 73%
25	264 or 67%	249 or 81%
30	275 or 70%	267 or 86%
35	284 or 72%	276 or 89%
50	316 or 80%	290 or 94%
75	357 or 91%	303 or 98%
Over 75	393 or 100%	309 or 100%

Table 57.4
Breakout and Postbreakout Statistics

Description	Bull Market	Bear Market
Formation end to breakout	5 days	5 days
Percentage of breakouts occurring near the 12-month low (L), center (C), or high (H)	L26%, C32%, H41%	L30%, C33%, H36%
Percentage rise for each 12-month lookback period	L30%, C18%, H25%	L19%, C13%, H11%
Throwbacks	41%	44%
Average time to throwback ends	10 days	10 days
Average rise for patterns with throwbacks	21%	13%
Average rise for patterns without throwbacks	26%	14%

the stock is already out of the doghouse. Those GES patterns near the yearly low are true surprises, and the stock climbs. Want proof? Read on.

Yearly position, performance. Where in the yearly price range do the best performing GES patterns reside? For both bull and bear markets, the best performers have breakouts near the yearly low. In bull markets, price climbs 30%, and in bear markets, it rises 19%, on average. Performance in this range is better than the other two-thirds of the yearly trading range.

Throwbacks. Throwbacks are comparatively rare, occurring between 41% and 44% of the time. When they do occur, it takes price 10 days to return to the breakout price.

When a throwback occurs, does performance suffer? Yes. In bull markets, price rises 21% when throwbacks occur, but 26% when they do not occur. The same trend happens in a bear market except that the performance difference is narrower.

Table 57.5 shows a frequency distribution of the days to the ultimate high. For example, 41% of the GES patterns in a bear market reached their high in less than a week. Just over half (51%, the sum of columns 7 and 14) summit in less than 2 weeks.

The table suggests that this pattern reaches the ultimate high quickly and the corresponding price rise is small. Notice that 7% top out after 42 days in a bear market. I have seen this slight blip a month after the breakout, so this one takes a bit longer to occur. Still, if you own a stock and it has been doing well,

Table 57.5
Frequency Distribution of Days to Ultimate High

Days:	7	14	21	28	35	42	49	56	63	70	>70
Bear market	41%	10%	9%	6%	6%	7%	2%	3%	1%	3%	13%
Bull market	41%	6%	6%	4%	3%	4%	4%	3%	2%	2%	25%

Table 57.6
Size and Volume Statistics

Description	Bull Market	Bear Market
Tall pattern performance	27%	16%
Short pattern performance	21%	12%
Median height as a percentage of breakout price	4.57%	5.50%
Heavy announcement day volume, performance	24%	14%
Light announcement day volume, performance	22%	13%

be aware of possible weakness in week 6. The stock may reach the ultimate high and then begin dropping.

Table 57.6 shows size and volume statistics.

Height. Do tall patterns perform better than short ones? Yes. In both markets, tall patterns do much better than short ones.

To use this feature, compute the GES pattern's height by subtracting the intraday low from the high posted on the announcement day. Divide the result by the breakout price (the intraday high). Then compare the result with the median in Table 57.6 for the appropriate market. If your value is above the median, then the pattern is tall, otherwise, it is short. For the best performance, select only tall patterns.

Announcement day volume. Does a GES pattern with above average volume perform better than do those with below average volume? Yes, but the differences are minimal. I compared volume on the announcement day with the 1-month average for the stock. Volume is the announcement day's volume, not the breakout day's volume.

Trading Tactics

Table 57.7 shows trading tactics for the GES pattern. I do not recommend trading this pattern simply because a company announced good earnings. The performance is just not good enough to justify the risk of a trade. Look back at Table 57.3, the one showing failure rates. Almost half of all GES patterns rise 10% and then tumble by at least 20%. Those are not good odds.

Wait for announcement. Never try to guess the breakout direction and buy ahead of an earnings announcement. Before I trade, I always check when the next earnings announcement will be (typically, it is 3 months after the last one). If it is within 3 weeks, I will skip the trade because my holding time is usually longer than 3 weeks, and I do not want to hold it during the announcement. In the few times that I did, the earnings announcement may have been good, but the stock invariably tumbled. Why? Because traders were expecting better. The earnings missed the whisper number and prices dropped, sometimes dramatically.

Table 57.7
Trading Tactics

Trading Tactic	Explanation
Wait for announcement	Never trade ahead of an earnings announcement.
Buy signal	Buy when price closes above the announcement day's high.
Trade with the trend	Buy if price is in an uptrend and other stocks in the industry are doing well.
Measure rule	Using prices from the announcement day, compute the difference between the intraday high and low. Add the difference to the intraday high to get the target price.
Limit order	For swing traders, put a limit order to sell at the target price. Price will hit it 75% of the time.

Buy signal. If you have a compelling situation, buy when price closes above the announcement day's high. Only then is the pattern valid.

Trade with the trend. Only trade a GES pattern if price is moving up. Check the direction of the general market. If it is rising, then that will tend to support your stock as well. Look at other stocks in the same industry. Are they moving up (good)? Are they showing bearish patterns (bad)? Are the majority of them trending down even as the market is rising (bad)? Are they making new highs (good)?

Try filtering your selections using a moving average. Select only those in which the 50-day (or whatever period you are comfortable with) moving average is rising. Check other indicators for buy signals and weigh the evidence before taking a position.

Measure rule. Use the measure rule to predict a price target. For example, imagine that on the announcement day, the intraday high was 50 and the low was 48. The pattern's height is two (50 – 48). Add this difference to the intraday high (50) to get the target price of 52 (50 + 2). Price will meet or exceed the target between 74% (bear market) and 76% (bull market) of the time.

Limit order. Since event patterns are very short duration patterns, meaning that the rise associated from them lasts days to a few weeks, many swing traders will use the measure rule to set a price target. They place a limit order to sell near the target price or just below overhead resistance. This method works about 75% of the time (see the Results Snapshot, "Percentage meeting price target").

Sample Trade

Figure 57.4 shows an example of how difficult it can be to make a profit trading the GES pattern. After price bottomed in November 2001, it started a long climb. In April, it formed a pennant leading to the earnings announcement. If price continued its normal pattern, we could expect price to fulfill the pennant