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**Interview:  
New point & figure fund**

**High jump indicator**

**The way ahead for  
execution algorithms**

## **Exchange Traded Funds**

**Roundtable: A bright future for the UK market**

### **Markets**

What will trigger the next correction in equities?

### **Techniques**

Pattern price targets revisited

### **Software**

Bond analytics and market data from TradeWeb

# CHART PATTERNS

## NEW GUIDELINES FOR DETERMINING TARGET PRICE

by Kathryn Griffiths

There is a wealth of literature on the subject of stock chart patterns with generic guidelines on how to place trades when one of these formations is identified. It is generally accepted that patterns can provide a rough guideline for how far the price may move and how long it might take for the stock to reach that target price.

A target price is gauged by measuring the height of the pattern and projecting that distance vertically on the chart starting at the "breakout" price for the pattern. The time horizon to reach the target is roughly estimated by measuring the length of time over which the pattern formed and projecting that distance horizontally from the date the pattern is confirmed by a "breakout" (see Figure 1).

These guidelines have been developed over the years as expert technical analysts document their techniques and observations. But the real question is, do patterns work? Can patterns be used to make more profitable trades? And if so, should we be using the general guidelines from the literature as described here or is it time for new guidelines?

Some of the technical analysis books attempt to address these questions with anecdotal comments on the frequency and reliability of certain types of chart patterns. Some books even provide statistics, although many of the studies from the past were based on manually identified chart patterns. This manual identification naturally imposes a limit on the sample of patterns that can be used for a study on pattern performance. Also patterns identified visually by analysts are subject to inconsistency

that is inherent in human nature. An analyst may be more or less strict about the criteria they use to identify a chart pattern. An analyst may also unintentionally incorporate extraneous information into their decision about whether or not a pattern is present in a certain chart. For example, they may unconsciously use the benefit of hindsight to observe how the price moved following a pattern, while that information is not available to traders trying to identify patterns as they form so they can place trades based on them.

A historical database of automatically identified chart patterns allows for a robust scientific study of pattern frequency and reliability, by making available a thorough and consistent sample of patterns without human bias.

A study based on automatically identified chart patterns was published in one of the recent books by Martin Pring, a popular author on the subject of patterns and technical analysis. The results are very interesting but first the guidelines were:

- The study looked at stocks from four sectors between 1982 and 2003: Financial, Retail, Transportation and Energy
- Over 5000 patterns were identified of the following types: Head & Shoulders Tops, Head & Shoulders Bottoms, Double Tops, Double Bottoms
- Primary bull and bear markets were identified for each sector
- Failed patterns were allowed to run their course (no benefit of prudent money management such as stop loss)

The results showed that while using text-book guidelines indicating that the target price should be achieved within the same amount of time it took for the pattern to form, just under 30% of the patterns reach their target price within that time frame. In other words if the pattern length was 50 days, 30% of the patterns achieved 100% of their target price within this 50 day period. Some may have taken just one day, and others could have taken 49 days, and so forth.

**“ UNDER 30% OF PATTERNS REACH THEIR TARGET WITHIN THE TIME TAKEN FOR THE PATTERN TO FORM.”**

Looking at the results another way, approximately 10% of patterns reached double their target price within that text-book time frame. The profit potential of these patterns can be exploited by using disciplined money management techniques such as stops to control losses and tap into the anticipated price movements.

Ideally, we would prefer to find a way to achieve greater profits from a greater percentage of patterns. And the results actually show that this is possible, if you are prepared to wait longer than the text-book time frame. Specifically, results were best when profits were →



Figure 1. Text-book guidelines measured from chart patterns

observed over a time frame equivalent to five times the pattern length. In this case, 70% of all the identified patterns reached their objective within 5 pattern lengths. If you like big winners and are prepared to wait, the study shows that approximately 25%, or a quarter of all patterns, reached four times their objective within 5 pattern lengths.

The above results were concluded when observing bullish patterns (Head & Shoulders Bottoms and Double Bottoms) in a bullish market. A very important point that all traders need to recognize is that breakouts that develop in the opposite direction of the primary trend are less likely to be successful than the kind of pro trend moves that were summarized above. While the

results for bullish patterns in a bear market were not as impressive, they were still promising and showed a similar improvement when waiting longer than the text-book guideline. 58% of bullish patterns in a bear market reach their target price within 5 pattern lengths following the breakout. Approximately 33% reach double the breakout objective, and 15% reach four times the objective.

The study confirmed prior knowledge that with-trend patterns have a greater likelihood of success, meanwhile contra-trend patterns are nonetheless beneficial. Also the study expands on text-book theory to offer that positions may have to be held longer than previously thought in order

to reap greater profits. This study is just one slice of research that could take advantage of automatically identified chart patterns to expand our understanding how to better evaluate a stock's potential. With more sectors and pattern types to analyze and many more characteristics to factor into a study, there seems to be a new pattern forming: a breakout in new guidelines for how to get the most out of price patterns.

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