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**m**CHARTING

*Detecting Trend Changes?*

# Does The Head & Shoulders Formation Work?

*Rarely will you come across a technique that detects an imminent change in trend, but here's a method that can help you do just that.*

by **Martin Boot**



The head and shoulders pattern has long been considered one of the most reliable in technical analysis. That *should* mean that more often than not, every trader can make high returns on their holdings.

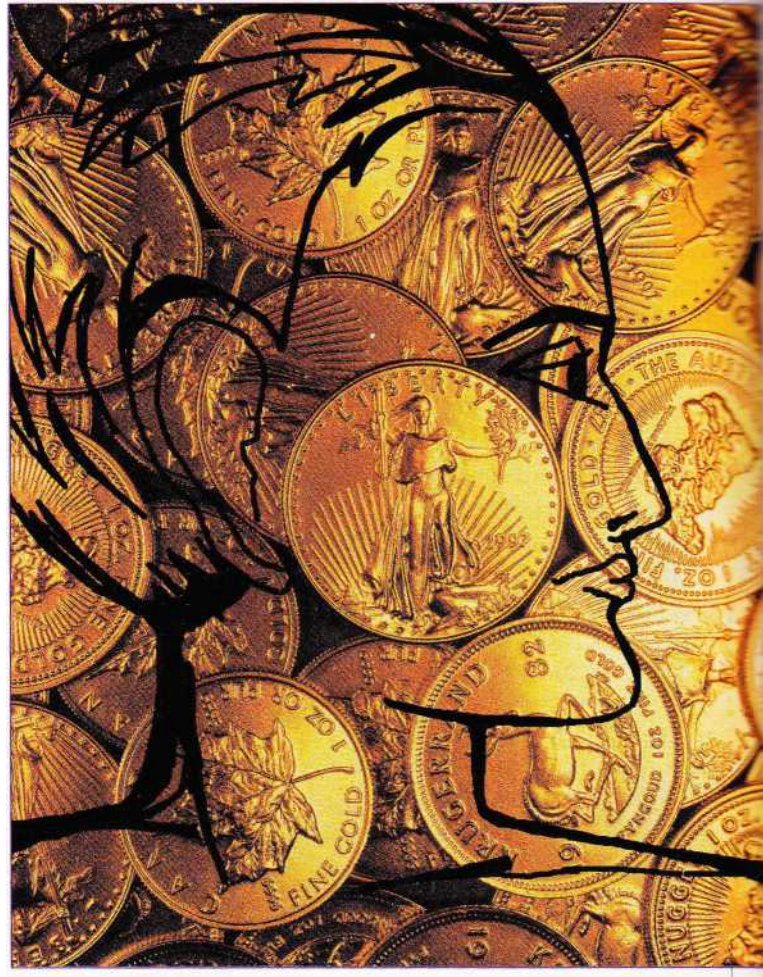
Unfortunately, it's not that simple.

I am engaged in a major research project involving statistical analysis of 8,513 New York Stock Exchange (NYSE) and Nasdaq stocks over a four-year period. I test well-known technical indicators as well as technical patterns, and the results have been revealing. They seem to be more in sync with daily trading practices than other results I have found in the literature. Recently, I completed my study of the well-known head and shoulders pattern, which is considered to indicate and even predict a change in trend. Here are the results.

## THE PATTERN

The head and shoulders pattern caught my attention after I read Thomas Bulkowski's article in the August 1997 *Technical Analysis of STOCKS & COMMODITIES*, in which he evaluated 300 stocks over a two-year time span. In it, Bulkowski reported an 83% success rate with the pattern. You can easily define this kind of pattern in a computer program and instruct the computer to trade broken necklines". Using logic from TechniFilter Plus (see sidebar, "Head and shoulders top report") for identifying them, I decided to write a program to trade the head and shoulders pattern.

When I applied it to my daily trading, I didn't experience an 83% success rate in the head and shoulders top formation, as you will see. Further, I found the pattern to be more



frequent in my studies than what Bulkowski stated in his analysis.

Program logic

**Shape:** After an upward price trend, the formation appears as three bumps, the center one being the tallest, and resembling a bust.

**Symmetry:** The two shoulders appear at about the same price levels. The distance from each shoulder to the head is approximately the same. There can be a variation in the appearance of the formation, but symmetry is usually good.

**Volume:** This will be the highest on the left shoulder, followed by the head. The right shoulder will have the lowest volume of the three peaks. **Neckline:**

This connects the lows of the two troughs between the three peaks. The line can slope up or down and is often used as a trigger point once prices pierce the line.

**Downside breakout:** Once prices pierce the neckline, they may pull back briefly, and then continue moving down

LTS

■ **Objective of the program is to find these :: : over a period of four years (1997- The #Sids**

Items 83,282

Timing as predicted 28,558=>34.2911%

Performing as predicted 54,723 => 65.7089%

Age 10 patterns per stock

**Program** measured time periods of five, following:

of correct signals for 5 days = 25,914 - .verage price  
No. of incorrect signals = 57,368 - .verage price change:

No. of correct signals for 20 days = 28,961 Average price  
No. of incorrect price change = 54,321 Average price

No. of correct signals for 60 days = 30,800 Average price  
No. of incorrect signals = 52,482 Average price change =

~re distribution of the head and shoulders pattern  
In 755 stocks the 7 -item did not occur at all. In 301 stocks the pattern occurred twice. I also ■ and a head end shoulders top, many stocks saw a

OBSERVATIONS

i found these observations:

- The head and shoulders pattern occurs
- 35% (or approximately one third) of the
- The largest profit comes within a four-average profit drops below the profit of the first week.
- 8.8% of the stocks never saw a head and shoulders pattern over the last four years, which means that more than 90% of the stocks formed the pattern several times.

FIGURE 1: DISTRIBUTION OF THE HEAD AND SHOULDERS PATTERN. The pattern does occur frequently among stocks, but is it reliable?

- 1.5% saw 25 or more head and shoulders patterns in their price development.
- There is a clustering of patterns between one and 17 occurrences.
- If the signal is correct, a downward movement between 10% and 99% can be observed after five days.

ANALYSIS

These findings do not reinforce the statements in Bulkowski's article. From a statistical point of view, the head and shoulders formation does not herald a change of trend in a financial security. If the formation is correct, then substantial gains can be obtained even within a one-week time frame.

My findings show that approximately 35% of the occurrences are profitable, but how do you turn this into a higher percentage? The key is to locate it in the proper time frame. The pattern should indicate a trend break. So, if you know a trend break is imminent, you can rely on the head and shoulders pattern.

But how do you know when a trend break is imminent? I don't know of any technical analysis technique that can predict such an event with a high probability. Unfortunately, most technical analysis techniques lag, and when a trend is defined, it is usually in

Issues	#Sids
0	755
1	301
2	367
3	346
4	404
5	363
6	387
7	427
8	457
9	448
10	440
11	481
12	449
13	416
14	355
15	365
16	319
17	301
18	268
19	193
20	171
21	129
22	104
23	70
24	70
25	41
26	29
27	17
28	13
29	10
30	7

ns in my database of 8,315 NYSE and 4 stocks results are:

20, days after the broken neckline and found

change = -13.8936%  
20.4899%

change = -15.4106%  
change = 18.9551%

change = -9.65398%  
25.2319%

over the tY.abase issues is displayed in Figure 1. 301 stocks the pattern occurred nee. and in 367 that after five days following the completion of downward movement between 10% and 99%.

frequently in stock prices. occurrences are profitable. week time frame; after 12 weeks the

hindsight. Once the top/ bottom sequence has changed, you know the trend has as well, but it is too late to make any predictions. There is no guarantee that a break in the neckline in a recent head and shoulders pattern will continue. **CHARTING**

**TECHNIFILTER PLUS HEAD & SHOULDERS TOP REPORT**  
To ignore any extraneous peaks and valleys, this report uses a 5% zigzag.

Column/Title	Description
[1] Symbol	Ticker symbol
[2] Rt	shoulder Returns the value of the most recent peak, which is considered the right shoulder of a head and shoulders pattern.
[3] Head	Returnsthevalueofthemostrapex, which is considered the right shoulder of a head and shoulders pattern.
[4] Lft shoulder	Returns the value of the second peak- back, which would be the head of the pattern. The head is a higher peak than either shoulder.
[5] Current slope	Returns the value of the third peak-back, which is the left shoulder of the pattern. Returns the value of the slope from the right shoulder to the current day. This gives you an idea of how quickly price has moved since the right shoulder was formed.
[6] Neckline crs	Returns 1 if the neckline has been broken in the most recent two days and zero if no cross occurred.
Condition	Which means
[5]<0 & [2]<3 & [3]>[4]	A negative-current slope and a head and shoulders pattern (that is, the second peak-back is higher than the first and third peak-backs).
[5]<0&[2]<[3]&[3]>[4]&[6]=1	Have a head and shoulders pattern and broken neckline.

Martin Boot is a computational linguist, psychotherapist, writer, and trader.

**SUGGESTED READING**



**Head and shoulders patterns can be helpful in determining trendline breakouts. However, simply identifying them will not provide a high success rate.**

predict a time frame for trend changes. Their studies show that head and shoulders formations are present at some of these primary cycles.

According to Merriman, between 1982 and 1997, 44 primary cycles unfolded in the Standard & Poor's futures (SPX). These primary cycles have a definite morphology that can be roughly described as a three-phase wave, with the third phase being the one where the trend changes.

According to Merriman, in this phase, the head and shoulders formation occurred seven times in the SPX. The confirmation of the primary cycle crest or trough took place when the neckline was broken, after which the market usually made a strong move in the direction of the breakout. I have found that both stock market indexes and individual stocks follow this cyclical pattern described by Merriman.

**CONCLUSION**

Head and shoulders patterns can be helpful in determining trendline breakouts. However, simply identifying them will not provide a high success rate; but by determining in which phase of a cycle the formation occurs, you can turn the head and shoulders pattern into a gold mine

Boot, Martin [2000], "Trend-Following With The ADX," *Technical Analysis of STOCKS & COMMODITIES*, Volume 18; September.

Bulkowski, Thomas [1997], "The Head And Shoulders Formation," *Technical Analysis of STOCKS & COMMODITIES*, Volume 15: August.

[2000]. *Encyclopedia Of Chart Patterns*, John Wiley & Sons.

Merriman, Raymond [1997], *The Ultimate Book On Stock Market Timing: Cycles And Patterns In The Indexes*, Seek-It Publications.

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TechniFilterPlus 8 Reference Manual: Reports, *Strategies & Formulas*, RTR Software.

**\$TechniFilter Plus (RTR Software)**

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