

# Investment Basics XLV. Technical analysis – breaking-out on an upward trend?

## 1. INTRODUCTION

At the turn of the last century the amount of information available to potential investors was minimal. Corporate accounting and reporting systems were still naïve, and the requirements for public disclosure were dismal. Nor was there much in the way of hard statistical data about the economy. Perhaps partially in response to the spectacular increases in stock prices that peaked in mid 1901, Charles H. Dow, editor of the Wall Street Journal, published a famous series of articles from 1900 to 1902 which formed the basis of what has come to be known as "Technical Analysis".

Over the intervening period new techniques for accessing risk and return have been developed, yet Technical Analysis has remained popular, often to the chagrin of many academics. "Even the major

assumption is that human psychology changes little over long periods of time.

3. Patterns can be identified by the use of charts of market data.
4. The patterns persist for a long enough period of time that advantage can be taken of perceived opportunities. This flies directly in the face of the concept of efficient markets.

## 3. APPLYING THE PRINCIPLES

Technicians have a large set of patterns of market prices, volumes and other indicators and often require relationships to co-exist between differing indicators. They observe market conditions in an attempt to discern the moment a pattern begins to emerge. When the pattern is identified, the analyst may take or change a position in the asset. The patterns are

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Over the intervening period new techniques for accessing risk and return have been developed, yet Technical Analysis has remained popular, often to the chagrin of many academics. "Even the major investment firms that employ many fundamental analysts also employ technical analysts to provide investment advice" (Reilly & Brown, 2000:870.).

What then is covered by the term Technical Analysis? "Technical analysis is a method of predicting price movements and future market trends by studying charts of past market action which takes into account the price of instruments, volume of trading and, where applicable, open interest in the instruments" (Reuters, 1999:8). Thus Chartists, or Technicians, (i.e. those who apply Technical Analysis) may use little fundamental analysis, positively disagree with the Efficient Market Hypothesis, and find themselves somewhat more in the camp of what is today referred to as Behavioural Finance.

## 2. UNDERLYING PRINCIPLES

Stated in the terms often used by Technicians, the underlying principles can be expressed as follows:

1. Market action discounts everything. This is taken to mean that all the information that is needed to

Technicians have a large set of patterns of market prices, volumes and other indicators and often require relationships to co-exist between differing indicators. They observe market conditions in an attempt to discern the moment a pattern begins to emerge. When the pattern is identified, the analyst may take or change a position in the asset. The patterns are considered to be suggestive of future price movements, and are not regarded as offering any form of certainty of future price changes. Nevertheless, Technicians expect that, on balance, their actions will yield positive investment outcomes.

A casual reader may be overwhelmed by the very large number of charts/techniques available. A technician will normally use only a small subset of charts, depending on his/her specific trading objectives and styles. Noble (as noted in Reuters, 1999) has suggested the following classification:

**Table 1: Classification of some charting techniques**

Market equilibrium traders	Classical technical analysis traders	Supply and demand fundamentals (often "floor traders")
<ul style="list-style-type: none"> <li>• Indicators e.g. Relative Strength</li> </ul>	<ul style="list-style-type: none"> <li>• Trends e.g. Moving Average</li> </ul>	<ul style="list-style-type: none"> <li>• Spreads</li> <li>• Flow of Funds</li> </ul>

To illustrate the techniques used, consider the graph (Figure 1) of the daily closing price of the exchange rate between the Deutsche mark and the US dollar for the period 1 January 2000 to 15 March 2001. For most of the early part of this period the dollar had appreciated against the mark, although there were many small reversals. The task was to forecast when the mark would again enter a period of relative strength.

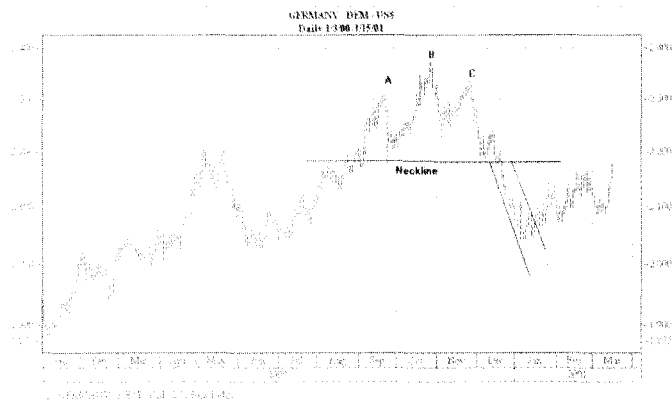


Figure 1: Deutsche mark/US dollar time series of daily exchange rates: January 2000 – March 2001

Technical analysts might see a familiar pattern in the data. The points marked A, B and C in the diagram portray the left shoulder, head, and right shoulder that give this pattern the name of “head and shoulders”. Once the price falls below the “neckline” then a reversal of the previous uptrend is predicted. In this instance their forecast proved correct.

As a further example consider the case of Enron. On the basis of the information that was available to fundamental analysts, there was no reason to suspect that the corporation was in dire financial difficulties – but the information that was provided by Enron and others may well prove to have been fraudulent. Technical analysts would have noticed that the price of Enron shares had dipped below their 200 days moving average in February 2001 and never recovered. “The stock gave what many chart watchers regard as an important sell signal when it plunged below its so-called 200-day moving average” (Graja, 2002).

If this sounds a little too far-fetched, consider that same analysis applied to a local share. Figure 2 illustrates the share price for BOE Ltd. The figure shows that the share traded below the 200-day moving average for more than 6 months before the surprising announcement that the Reserve Bank would guarantee the deposits of investors!

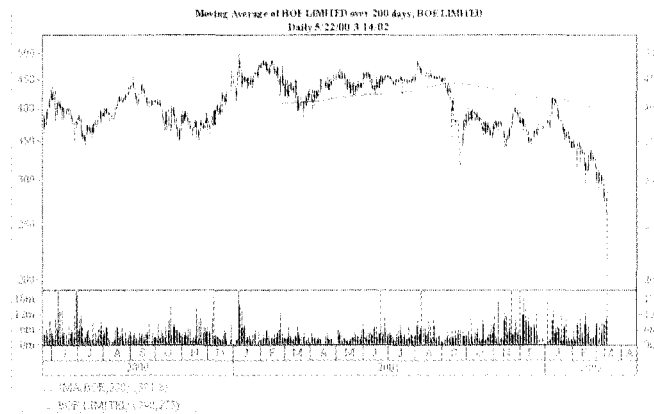


Figure 2: 200 day moving average of BOE daily share price: May 2000 – March 2002

4. ASSESSMENT

Financial economists have fought a long battle to bring rigor and hard science to the understanding of financial markets, instruments and processes. There is much opposition to Technical Analysis within academia, and yet within the investments profession there appears to be a growing popularity in Technical Analysis. In the aftermath of the crash in the US of October 1987, Robert Shiller surveyed both institutional and private investors. Amongst other questions investors were asked whether they were influenced by price dropping through a 200-day moving average or other long-term trend line. This trend line is an example of a technical indicator. About a third on both the individual and institutional samples answered yes (Shiller, 1989: p394). As a further example consider a survey by the Group of Thirty which reported in 1985 that 97 percent of banks and 87 percent of securities houses believed that the use of technical analysis has a significant impact on the foreign exchange market.

Supporters of Technical Analysis do produce empirical evidence to further their case. For example, Allen and Taylor (1990) analysed the accuracy of one-week and four-week forecasts of three major exchange rates. Over a ten-month period some technicians were able to outperform alternative popular forecasting techniques (random walk models, vector autoregressions, univariate autoregressive moving average time series models). However individual forecasters differed in the signals they detected as well as the point in time when such signals were perceived.

Technical Analysis offers a number of advantages over other approaches; the techniques can be used to analyse a wide variety of instruments, time periods of differing granularity can be analysed (from hourly data to decades), and the basic principles are easy to understand. In addition, there exists a plethora of tools and techniques to make data and chart creation and manipulation relatively easy to accomplish.

There are however some major difficulties. Successful application of Technical Analysis requires information that is both accurate and timely. Timely identification of patterns is important, since opportunities may pass quickly. In addition the theory relies on human behaviour not adapting (or adapting rather slowly) over time. There is also a large degree of subjectivity in the analysis of the charts. This last point is important in empirical test of the approach. It is quite possible (in fact a common experience) that different technicians will read the same chart differently. The implication is that it is often not possible to specify “trading rules” in a format that allows for automated simulations to test the theory.

Similar factors to those which lead to Charles Dow to search for meaning in the data generated by the market process could once again be driving the popularity of Technical Analysis. In markets where price movements are highly volatile and where changes in the underlying economic data occur with considerably less frequency (e.g. foreign exchange markets), traders are sorely in need of tools of analysis. In addition, the unreliability of corporate financial reporting presents a real possibility to “follow the smart money”, an analogy often used by Technicians to explain in part what their analysis uncovers.

While many academics find the use of Technical Analysis somewhat distasteful, they might do well to ponder whether it is not the paucity of suitable theoretical constructs within mainstream financial theory that is the real cause for the growth in popularity of the Technician.

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