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## An Introduction to Technical Analysis

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# AN INTRODUCTION TO TECHNICAL ANALYSIS

Technical stock analysis uses past prices and trading volume or both to predict future prices. A broad range of techniques such as chart analysis, moving averages, and other filters and oscillators can be used to identify predictable patterns in stock prices. The conventional wisdom is that stock-price patterns emerge from systematic psychological behavior of market participants. This note provides an overview of some common analytical tools for identifying trading opportunities.

## Trend-Line Analysis

Trend lines in stock prices are used to identify movements in market bullishness or bearishness toward a particular stock or stock index.[1] The usual way to start an analysis is to identify a trend by looking at a price chart.

There are three types of trends: upward, downward, and trendless. In an upward trend, a succession of higher highs and higher lows is observed. In other words, the chart shows a steady increase in price, with the relative lows higher than the preceding lows. Similarly, in a downward trend, a succession of lower highs and lower lows is observed. A trendless, or sideward, trend is observed when relative highs and lows remain at the same level, and price moves within that range.

Trends can be made apparent by drawing a trend line. An upward trend line (bullish support line) connects the past relative lows, and a downward trend line (bearish resistance line) connects the past relative highs. When the price is trendless, relative lows (and highs) will be similar to the preceding lows (and highs), and the trend line will be nearly horizontal for the highs and the lows.

When several candidates for the trend line are identified, the general rule is to use the line that shows less steepness and connects the greatest number of relative highs and lows. **Figure 1**

[1] The terms "bull" and "bear" are used to define market sentiment. In a bull market, prices rise amid generally optimistic views; in a bear market, prices decline amid generally pessimistic views.

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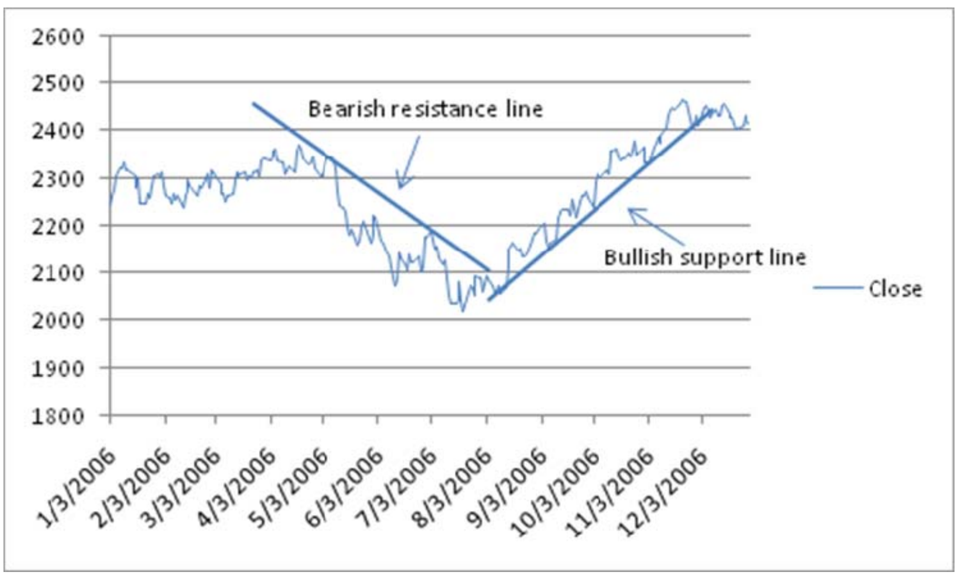
shows examples of how trend lines can be drawn for the 2006 series of NASDAQ index values. Although a stock price may occasionally show unusual movements for a few days (i.e., spikes, gaps), those small irregularities in the trend are ignored.[2] The most important aspect of a trend-line analysis is to identify the trend (upward, downward, or trendless) and its reversal point.

A trend will change, possibly even reverse, once a breakout is observed. A breakout occurs when the stock price moves beyond the trend line. It is a sign of a change in trend and can be prompted by unexpected business news or simply by changes in market psychologies.

Predicting a break from a price trend is difficult. In some cases, the short-term trend might be upward and the long-term trend downward; one must evaluate the relative strengths of conflicting signals.

Figure 1. Hypothetical trend lines for closing values of NASDAQ stock index.




[2] The time horizon of a price chart can vary with the type of trading. For instance, day traders may look at the one-month chart to identify the short-term trend, and institutional investors may use the five-year chart to figure out the long-term trend. Typically, technical analysts use shorter charts to predict short-term price movements and longer charts to predict long-term price movements. Also, by analyzing both short-term and long-term charts, they find it easier to get an idea of when the trend is likely to end.