Analyst Insight

MACD INDICATOR
Moving Average Convergence Divergence

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MACD is a trend following indicator that measures the difference between two moving averages of prices. MACD shown in red, is the difference between a 26 day and a 12 day exponential moving average. A 9 day exponential moving average called the "signal" line shown in blue, is plotted on top of the MACD to show buy and sell opportunities.
The moving averages used are exponentially weighted, which gives more weight to the more recent data. The name of the indicator comes from the fact that the shorter EMA is continually converging toward and diverging away from the longer EMA.

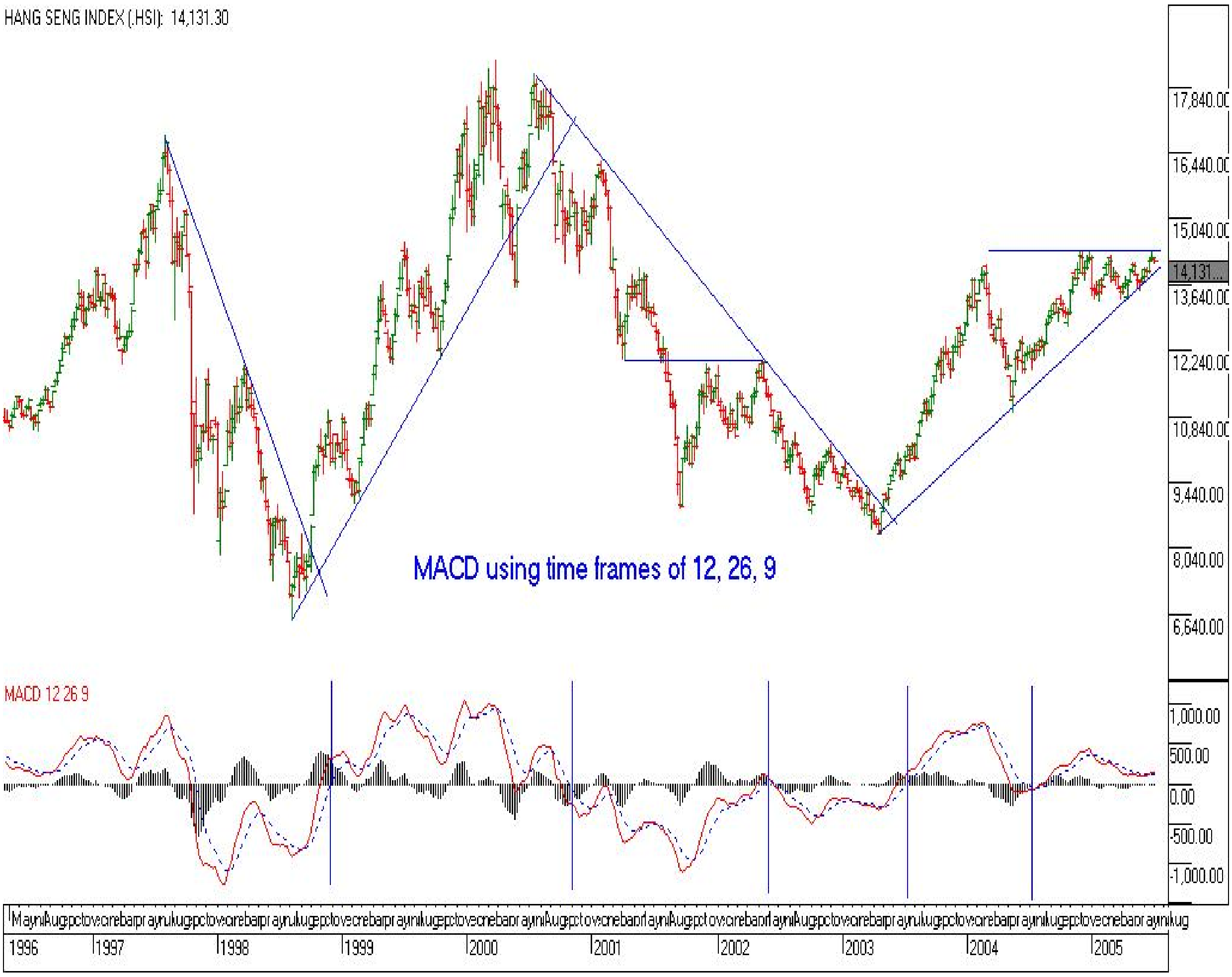
The formula used when calculating the MACD indicator is as follows:
1. Calculate a 12 day EMA of closing prices
2. Calculate a 26 day EMA of closing prices
3. Subtract the 26 day from the 12 day EMA and plot their difference – This then becomes the fast MACD line
4. Calculate a 9 day EMA of the fast line and this then becomes the slow signal line

Traders will sometimes vary the calculation period of the MACD indicator depending on the market and their trading strategy. Some technicians choose time frames for their indicators based on a specific number series like the famous and well known Fibonacci number series.

This number series is calculated by starting with the number one and simply adding each number to the previous number as follows: 0,1,1,2,3,5,8,13,21,34,55,89,144 and so on. Based on the Fibonacci number series the equivalent time frames for the MACD indicator would be 13, 34 and 8.

The histogram is another interesting aspect to this indicator. When first viewed the histogram is often mistaken for volume as it looks very similar to volume spikes seen on charts.
The histogram is actually displaying the difference between the two moving averages. To prove this to yourself have a close look at the averages and you will notice when the two moving averages spread further apart the histogram will become quite large and when the two moving averages get very close together the histogram will become very small.

You will also notice a centre or zero line running through the middle of the histogram. When the histogram spikes are above this zero line it means the fast MACD line is above the slow signal line and when the histogram spikes are below the zero line it means the fast MACD line is below the slow signal line. The histogram is also used to act as a filter to the buy and sell signals generated when the two moving averages cross over and there are two ways the histogram can be used to confirm these buy and sell signals.

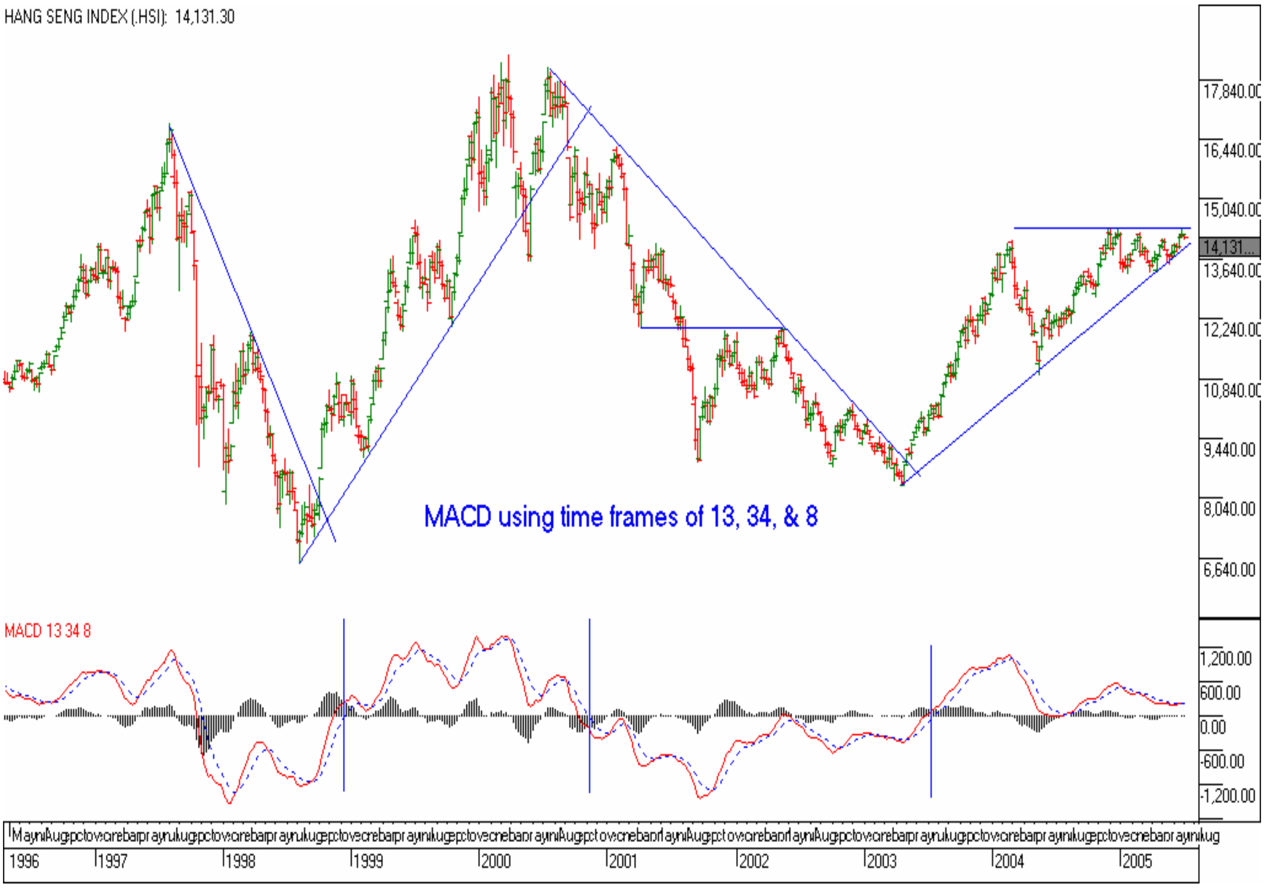


The MACD indicator is most effective in strongly trending markets and therefore should only be used in markets that are trending well, ranging markets will tend to produce whipsaws or false buy and sell signals.

The basic MACD trading rule is to sell when the fast MACD line falls below the slow 9 day signal line and to buy when the fast MACD line rises above the slow 9 day signal line. Ideally the buy signal generated by the averages should be occurring below the histogram, and sell signal from the averages should occur above the histogram. When the averages cross producing the buy and sell signal the histogram will soon after confirm the buy or sell signal by crossing above or below the zero line.

A second and very useful way the histogram can be used to confirm the buy and sell signal from the averages is to wait for both averages to cross through the zero line of the histogram. By doing this it will add further weight to the significance of the buy or sell signal and suggest a higher probability trade.

The other powerful and important aspect to this indicator which is not often explained or taught is how it can be used to measure the strength of the trend and give the trader the ability to let their profits run. This is achieved by again comparing the averages to the histogram and is another reason why the buy signal should ideally occur below the histogram and the sell signal above the histogram.



As previously mentioned the buy signal can be confirmed as a strong signal when both averages cross above the zero line of the histogram. As long as both averages then remain above the histogram the up trend is said to strong and likely to continue.

During the uptrend the averages will often cross above and below each other, but as long as both averages are still holding above the zero line of the histogram the up trend is still intact and likely to continue. It's not until the averages cross back down through the zero line of the histogram that indicator would suggest that the up trend is over. This can be valuable information when trying to let your profits run in a trade and is of extreme value for people who try to trade or capture intermediate moves.

Best Regards,

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