**Senior Capstone Project**

Evaluating Success of Technical Analysis Investment Strategies

Chapter 4: Moving Average Convergence Divergence



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**Background**

The MACD is another popular technical analysis technique, it concentrates on the momentum of a stock. It has two lines which oscillate between one another. The first line, referred to as the MACD line is found by looking at longer term EMA (typically 26) / shorter term EMA (typically 12). The second line is referred to as the signal line which is typically a 9 day EMA of the MACD line. It can suggest the following:

- Bullish Signal: When the MACD Line crosses above the Signal Line, it can indicate upward momentum, a possible buy signal.

- Bearish Signal: When the MACD Line crosses below the Signal Line, it can indicate downward momentum, a possible sell signal.

- Divergence: Price action diverging from the MACD can signal potential reversals.

By utilizing an exponential moving average it gives a greater weight to the more recent values, this makes it more sensitive to recent changes in price. The MACD line measures the convergence or divergence between fast and slow moving averages. When the MACD line is positive (above 0), the short term trend is stronger than the long term trend which suggests an upwards trend. Where as when the MACD line is negative (below 0) the short term is weaker than the long term trend which suggests downwards momentum.

The signal line is used as the buy and sell signal by smoothing the MACD line using a 9 day ema period. When the MACD line goes above the signal line it indicates a buy signal and the MACD line goes below the signal line it indicates a sell signal.

A graph of a stock market

Description automatically generated with medium confidence

Observe that there is a much higher number of buy and sell signals, as whenever the line crosses over it is going to suggest the movement of the stock.