



# Brainy's Articles on Technical Analysis

## MACD — Moving Average Convergence Divergence

Article No:  
**TA-4230**  
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### Introduction

One of many technical analysis indicators is the *MACD* indicator — Moving Average Convergence Divergence. It is considered to be a trend-following lagging indicator; but is also considered to be a momentum oscillator.

The MACD is a commonly used and popular indicator, developed by Gerald Appel, and is useful in trending markets, not ranging markets.

In this article in Brainy's series on Technical Analysis (number TA-4230) we look at the *MACD* indicator, and its usage.

### What is the MACD?

The MACD indicator is basically a special combination of two moving averages. It comprises two lines that appear to be moving averages (in reality, they are). Note the following with reference to the numbers in the screen shot in Figure 1 below of the Weekly chart of BHP:

1. Fast MACD Line — Often just referred to as the MACD line, it is the solid line marked as (1) in the Figure below and is actually derived from two exponential moving average values (typically 12 and 26 periods). It is the difference between them. Because the difference between these two moving averages is sometimes positive and sometimes negative, this indicator oscillates above and below zero (marked 3 on the chart).
2. Signal (or trigger) Line — The line marked as (2) is itself an exponential moving average of the fast line (usually a 9 period moving average).
3. The zero line across the middle about which the indicator oscillates.
4. The "Above" label — a potential buy signal — where the fast line crosses to Above the signal line.
5. The "Below" label — a potential sell signal — where the fast line crosses to Below the signal line.
6. Note in the lower price pane that for the uptrending stock shown, there was a price increase of some 34% in 22 weeks.

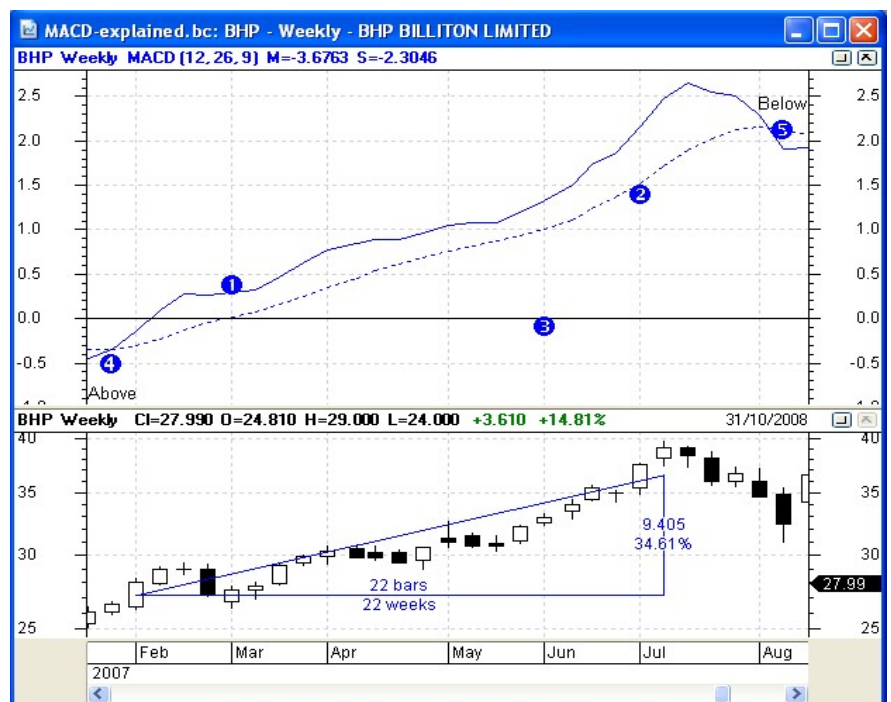


Figure 1: MACD indicator (upper pane),  
with BHP Weekly candles (lower pane).



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