

The background of the image is a complex financial chart. It features a central area with a black background containing a yellow candlestick chart. Above and below this central area are two line graphs: a blue line graph at the top and a red line graph at the bottom. The blue line graph shows a significant peak in the upper right quadrant, while the red line graph shows a corresponding dip. The overall aesthetic is high-contrast and technical, typical of trading software.

## Everything You Need to Know About MACD

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# About myself...

Full-time trader

Securities for the past 35 years

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# Agenda

MACD Technical Indicator

How is it constructed

What does the indicator indicate

How to use it

Shortcomings of the MACD indicator

# MACD Indicator

MACD stands for **M**oving **A**verage **C**onvergence & **D**ivergence

One of the most popular indicators used in technical analysis. It is used primarily to spot changes in the strength (momentum), direction, and duration of a trend of the price of an underlying.

# Moving Average

When applied to a price chart, it is typically an Average of the most recent *closing* prices.

**Length:** specifies the number of prices taken into consideration.

**Moving:** As new prices arrive the oldest prices are discarded from the calculation

**Type:** Simple & Exponential

# Moving Average Characteristics

## Lagging Issue

Simple vs Exponential

Slow (longer length) vs Fast (shorter length)

## Trend Indicator

Not very useful when price moves sideways

# Introduction of MACD

In 1970s a technical analyst with the name of Gerald Appel came up with the idea of applying two EMAs to a price chart and started studying how these EMAs move closer (converge) and move farther away (diverge) from each other.

He called the study (indicator) - Moving Average Convergence and Divergence indicator - MACD



# Interpreting MACD

What does positive MACD mean – trend UP

What does rising MACD show when it is positive – UP trend momentum increase

What does negative MACD mean – trend DN

What does falling MACD show when it is negative – DN trend momentum increase

What does flattening of MACD mean – cruise control 😊

MACD turns two trend-following moving averages into both a trend indicator and a momentum indicator.

# Dealing with the Lag

In 1986 another technical analyst with the name of Thomas Aspray added a histogram to the MACD to compensate for the lag.

He did so by applying a 9 period EMA to MACD called Signal line and then plotting the MACD Histogram (MACDH). Practically applying a MACD to MACD 😊

# Components of the MACD Indicator



# Trading Interpretations (NOT Rules!)

Signal Line Crossovers – most significant

Zero Crossovers – less significant

Divergence – An indicator can be divergent from prices for much longer than proponents of its use may care to admit. Yet if used intelligently, divergence can be a useful tool.

# MACD Timing

Why 12, 26, 9 ? – Default on most (all) platforms  
Maybe 10, 22, 7 !

**MOMENTUM**

**TREND**

Fast (small numbers) ← settings → Slow (large numbers)

**trend**

**momentum**

Other common settings: 9, 19, 9 / 5, 3, 5 / 5, 11, 5 (used on monthly charts)

**MACD indicator is only as useful as the context in which it is applied.**

# Shortcomings of MACD...

1 of 2

- Since it is based on MAs it is inherently a lagging indicator
- It is less useful for stocks that move erratically or don't trend
- Both MACD & MACDH give false signals on lower timeframes. MACD is best used on Daily, Weekly & Monthly charts
- Smaller (faster) the settings, more false signals the indicator gives

# Shortcomings of MACD...

2 of 2

- Larger (slower) the settings, trading signals the indicator “misses”
- The magnitude of the MACD signal is dependent on the price of stock, therefore it is NOT possible to compare the MACD of stocks that vary in price
- Since the indicator is unbounded, it is NOT useful for identifying over-sold/buy levels

# MACD Conclusion

- MACD is special since it indicates both trend and momentum
- When appropriately applied it closely indicates price reflection points
- It is one of the most popular indicators since it quickly and easily identifies the direction and strength of the price trend
- Few technical indicators have proven to be more reliable than MACD



# Thank You

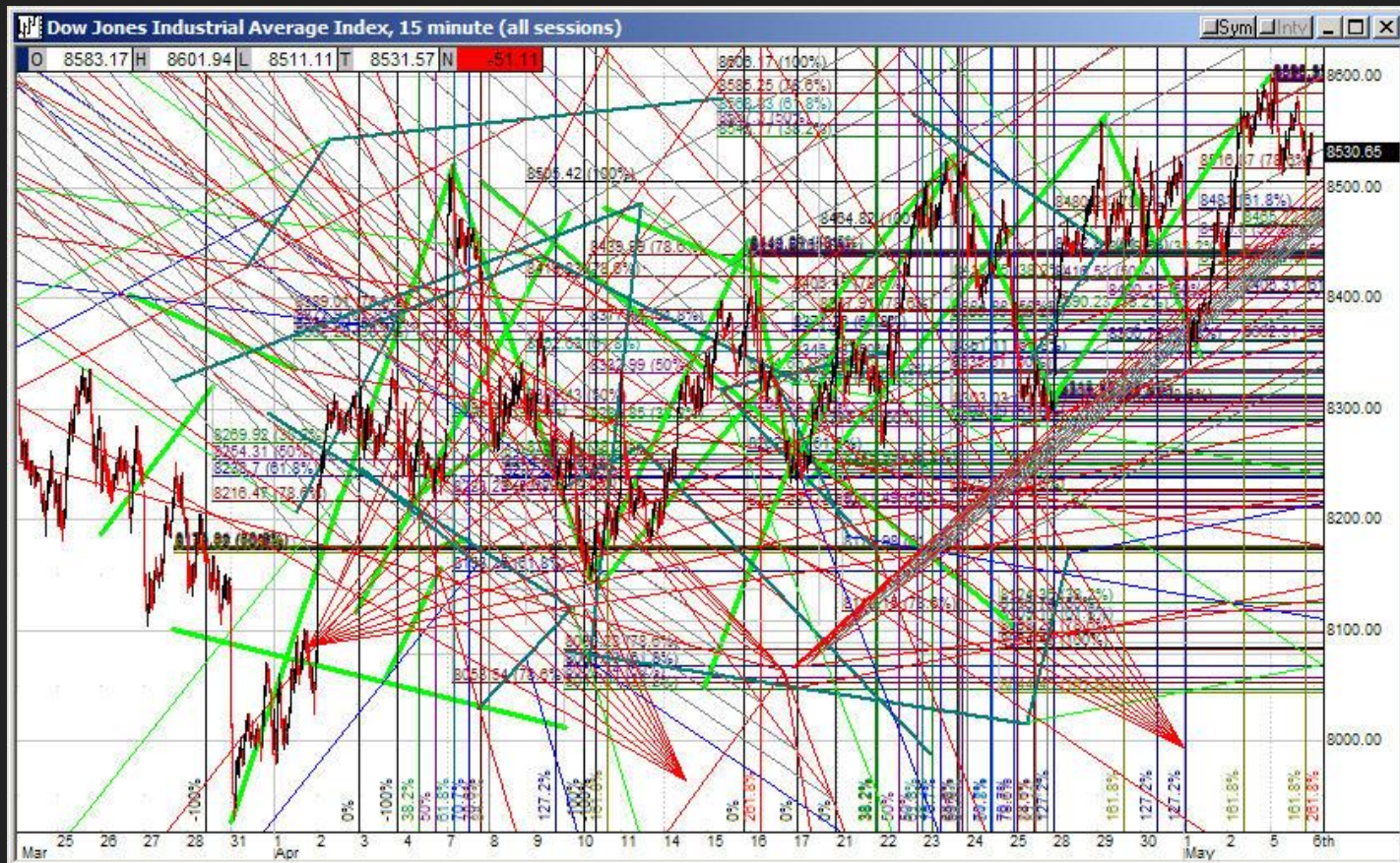
## Sources:

<https://trader.fandom.com/wiki/MACD>

<https://en.wikipedia.org/wiki/MACD>

[https://school.stockcharts.com/doku.php?id=technical\\_indicators:moving\\_average\\_convergence\\_divergence\\_macd](https://school.stockcharts.com/doku.php?id=technical_indicators:moving_average_convergence_divergence_macd)

# Q&A



## Technical Analysis !