MACD Ultimate Guide + 5 Profitable Trading Strategies [Video]

Are you an indicator trader? If yes, then you will enjoy this comprehensive guide to one of the most widely used technical trading tools – the moving average convergence divergence (MACD).

In this tutorial, we will cover 5 [trading strategies](#) using the indicator and how you can implement these methodologies within your own trading system.

Beyond the strategies, we will explore if the MACD stock indicator is appropriate for [day trading](#) and how well the MACD stock indicator stacks up against moving averages.
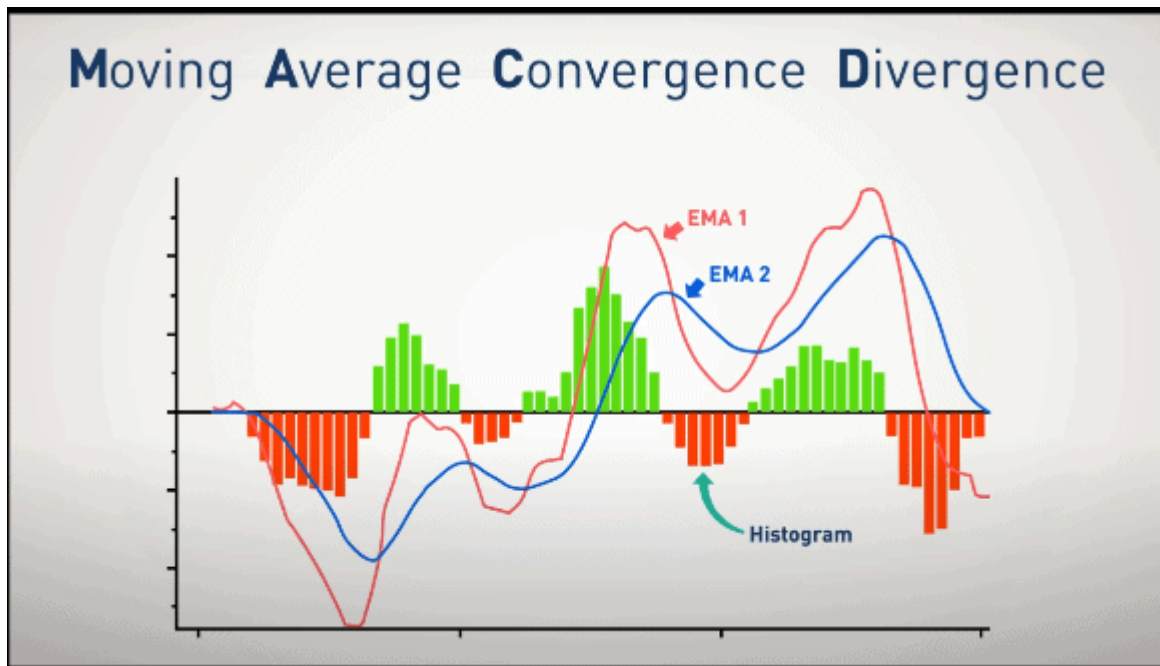
How To Pronounce "MACD"

There are two ways you can pronounce MACD.

The first is by spelling out each letter by saying M – A – C – D. The more popular option is to say "MAC-D".

In order for the trading community to take you seriously, these are the sorts of things we have to get right off the bat!

With that aside, let's dig into the content.

Chapter 1: What is the MACD Stock Indicator?

The moving average convergence divergence calculation is a lagging indicator used to follow trends. It consists of two exponential moving averages and a histogram.

Formula & Period

The default values for the indicator are 12,26,9.

It is important to mention many traders confuse the two lines in the indicator with simple moving averages. Remember, the lines are exponential moving averages and thus will have a greater reaction to the most recent price movement, unlike the simple moving average (SMA).

Thus, the MACD lines are represented as follows: 12-period EMA and 26-period EMA.

If you want to learn more about the MACD stock indicator *formula*, check out the early part of this [blog post](#) [1] from Rayner over at TradingwithRyner.com.

This period can be changed to represent a slower or faster

moving average (i.e. 5-minute, 60-minute, daily).

Smooth Line and Trigger Line

The MACD calculation generates a smoothed line as depicted by the blue line in the chart below.
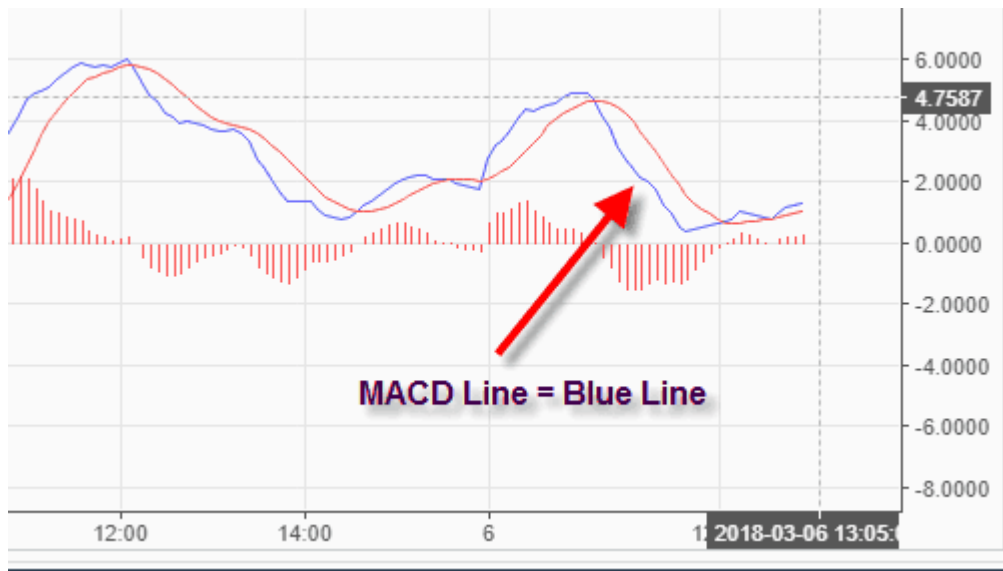

Next up is the red line in the chart, is most commonly referred to as the trigger line.

The red line is the 9-period EMA of the MACD line.

This may sound a little confusing, but it's simply an average of an average. This 9-EMA is then plotted on the chart with the MACD line. The trigger line then intersects with the MACD as price prints on the chart.

To learn more about how to calculate the exponential moving average, please visit our article which goes into more detail.
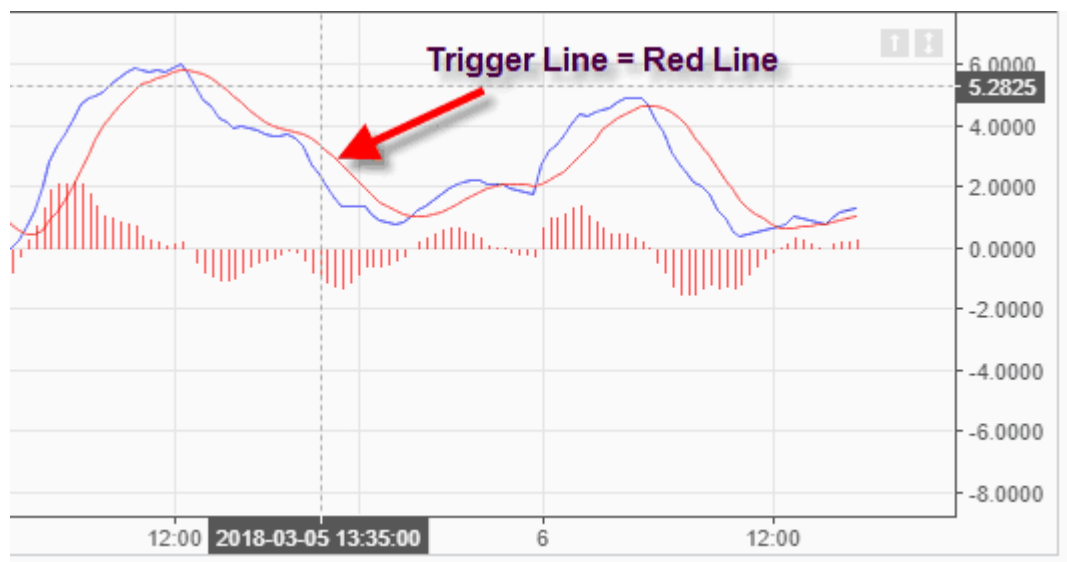
Trigger Line

The last component of the MACD is the histogram, which displays the difference between the two EMAs of the indicator (12 and 26). Thus, the histogram gives a positive value when the fast EMA (12) crosses above the slow EMA (26) and negative when the fast crosses below the slow.
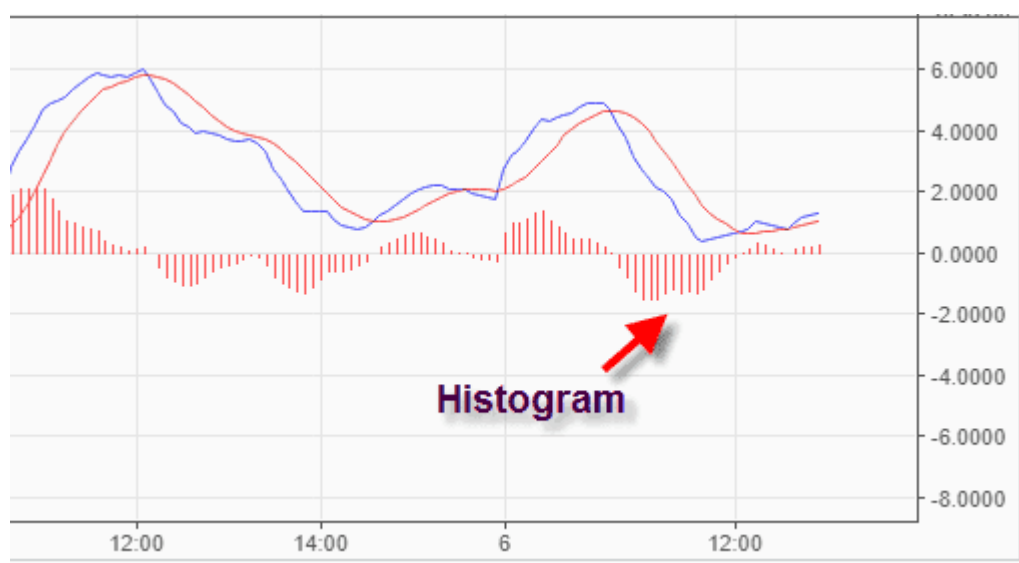
Histogram

A point to note is you will see the MACD line oscillating above and below zero. We will discuss this in more detail later, but as a preview, the size of the histogram and whether the MACD stock indicator is above or below zero **speaks to the momentum of the security**.

Chapter 2: Proper MACD Settings
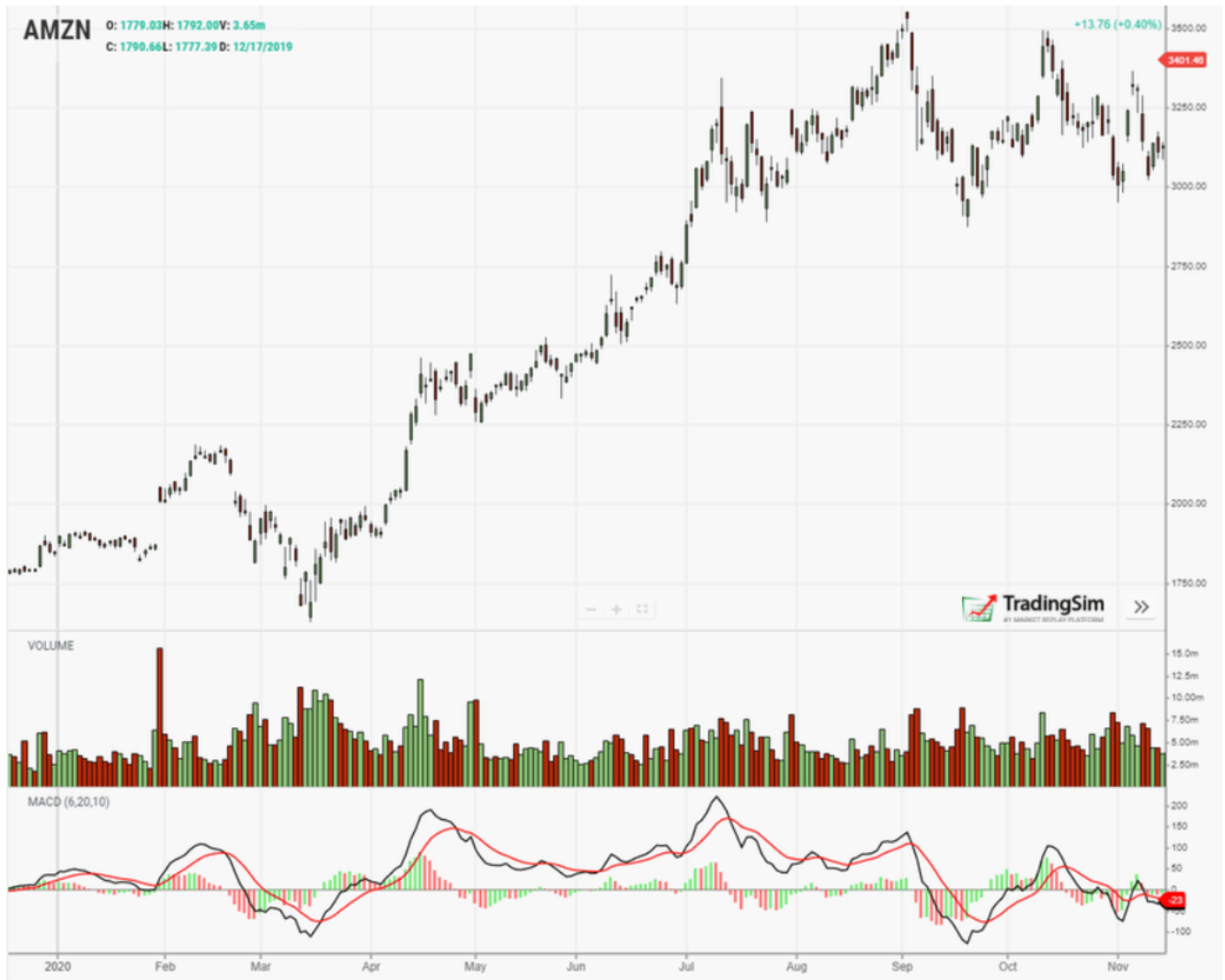
Here is a chart of Amazon with default MACD stock indicator settings applied below the price action.

Standard MACD w/ 12,26,9 — Amazon
What would happen if we were to lower the settings on the trigger line to a shorter period?

As you can see from the revised AMZN chart below, the number of trade signals increased when we lower the moving average period from 12,26,9 to 6,20,10.

Fast MACD w/ 6,20,10 — Amazon

Generally speaking, more trade signals is not always a good thing and can lead to overtrading.

On the flip side, you may want to consider increasing the trigger line period, so you can monitor longer-term trends.

Just make sure the context matches the MACD parameters if you decide to play around with the default time periods. Otherwise, this can lead down a slippery slope of "analysis paralysis."

Chapter 3: MACD Stock Indicator Trading Signals

Moving Average Cross

You have likely heard of the popular [golden cross](#) as a predictor of major market changes. Well, when it comes to the MACD trading strategy we don't need such a significant crossing to generate valid trade signals.

The most important signal of the moving average convergence divergence is when the trigger line crosses the MACD up or down. This gives us a signal that a trend might be emerging in the direction of the cross.

Context is everything, though. While the MACD may provide many cross signals, you do not want to act on every signal.

Have you ever heard of the quote "The Trend is Your Friend"?

Well, the MACD trading strategy is firmly rooted in this old trading adage.

Zero Line Filter

As a general rule of thumb, if the MACD is below the zero line, do not open any long positions. Even when the trigger line crosses above the MACD line.

Conversely, if the MACD stock indicator is above the zero line, **do not open any short positions**. Even when the trigger

crosses below the MACD line.

To further illustrate this point, let's check out a chart of Bitcoin.

Bitcoin MACD Signals

Notice how the MACD stock indicator stayed above the zero line during the entire rally from the low 6000 range all the way

above 11,600.

No doubt many traders would have thought Bitcoin was way overbought and would have potentially shorted every time the trigger line crossed below the MACD stock indicator. This approach would have proven disastrous as Bitcoin kept grinding higher.

What would have kept you from being squeezed?

That's right, you should ignore sell signals when the MACD stock indicator is above zero.

Divergences

Does a divergence between the MACD and stock price lead to trend reversals?

If you see price increasing and the MACD recording lower highs, then you have a bearish divergence.

Conversely, you have a bullish divergence when the price is decreasing and the moving average convergence divergence is recording higher lows.

Out of the three basic rules identified in this chapter, this can be the most difficult to interpret. Not that it doesn't work, but you can receive multiple divergence signals before price ultimately shifts.

Therefore, if your timing is slightly off, you could get stopped out of a trade right before price moves in the desired direction.

MACD Divergence

This is a one-hour chart of Bitcoin. The selloff in Bitcoin was brutal. As the price of Bitcoin continued lower, the MACD was making higher highs.

Divergence may not lead to an immediate reversal, but if this pattern continues to repeat itself, a change is likely around the corner.

Moving Average Overbought/Oversold Conditions

Since the MACD stock indicator has no upper or lower limit, traders do not often think of using the tool as an overbought/oversold indicator.

However, to [identify when a stock has entered the overbought/oversold](#) territory, you can look for a large distance between the fast and slow lines of the indicator.

According to Charles Langford, PhD., [when the price increases between the short and long average](#), [2] "the price trend is solid and continues in the same direction."

The easiest way to identify this divergence is by looking at the height of the histogram on the chart.

MACD Extension

This divergence can lead to sharp rallies counter to the preceding trend. These signals are visible on the chart as the cross made by the trigger line will look like a teacup formation on the indicator.

Again, the MACD stock indicator has no limits, so you need to apply a longer look-back period to gauge if the security is overbought or oversold.

To illustrate this point, let's take a look at the S&P 500 E-mini Futures contract.

MACD Overgought_Oversold

We've selected the S&P 500 E-mini contract because the security is less volatile and has consistent price moves. This will help reduce the extreme readings of the MACD.

Next, we looked for levels above and below the zero line where the histogram would retreat in the opposite direction. **This is where using the MACD trading strategy as an overbought/oversold indicator gets tricky**.

At any given point, a security can have an explosive move and what historically was an extreme reading, no longer matters.

If you decide to use the MACD trading strategy as a means to gauge overbought/oversold areas, you must adhere to strict

stops. Again, the MACD is a momentum indicator and not an oscillator — there is no "stop button" once things get going.

To find more information on stops, you can check out this post on how to use the [parabolic SAR to manage trades](). The indicator's sole purpose is to provide stop protection when in a trade.

Chapter 4: 5 Trading Strategies Using the MACD:

Now that we understand the basics of the MACD stock indicator, let's dive into five simple strategies you can test out. We've decided to take the approach of using less popular indicators for these strategies to see if we can uncover some hidden gems.

Feel free to stress test each of these strategies to see which one works best with your trading style. For each of these entries, we recommend you use a stop limit order to ensure you get the best pricing on the execution.

#1 – MACD + Relative Vigor Index

Why the Relative Vigor Index (RVI)? The RVI is an oscillator that correlates a security's closing price to its price range.

The calculation is a bit complicated. but to simplify things, think of the RVI as a second cousin of the Stochastic Oscillator. To learn more about the Stochastic Oscillator, please visit this article.

By adding an oscillator in the mix, it can provide greater

context of overbought/oversold conditions. This adds context to the MACD stock indicator which confirms if the momentum or strength of the trend is intact.

The basic idea behind combining these two tools is **to match crossovers**.

In other words, if one of the indicators has a cross, we wait for a cross in the same direction by the other indicator. When this happens, we buy or sell the equity.

To manage the position, we hold until the moving average convergence divergence gives us a signal to close the trade.

The below image illustrates this strategy:

MACD + Relative Vigor Index
This is the 60-minute chart of Citigroup. It shows two short and one long positions. Each were opened after a crossover from the MACD and the RVI.

These crossovers are highlighted with the green circles. Also note the red circles on the MACD highlight where the position should have been closed.

From these three positions, we would have gained a profit of $3.86 per share.

#2 — MACD + Money Flow Index

Next up, the [money flow index](#) (MFI). The money flow index is another oscillator, but this oscillator focuses on both price and volume.

The MFI will generate less buy and sell signals compared to other oscillators because the money flow index requires both price movement and surges in volume to produce extreme readings.

In this strategy, we will combine the crossover of the MACD stock indicator with overbought/oversold signals produced by the money flow index (MFI).

When the MFI gives us a signal for an overbought stock, we wait for a bearish cross of the MACD lines. If this happens, we go short.

Similarly, it acts the same way in the opposite direction. An oversold MFI reading and a bullish cross of the MACD lines generates a long signal.

Therefore, we stay with our position until the signal line of the MACD breaks the trigger line in the opposite direction. The below image illustrates this strategy:

MACD + MFI
This is the 10-minute chart of Bank of America.

The first green circle highlights the moment when the MFI is signaling that BAC is oversold. 30 minutes later, the MACD stock indicator has a bullish signal and we open our long position at the green circle highlighted on the MACD.

We hold our position until the MACD lines cross in a bearish direction as shown by the red circle on the MACD. This position would have brought us profits of 60 cents per share for about 6 hours of work.

#3 — MACD + TEMA

Let's turn our attention now to the Triple Exponential Moving Average (TEMA) indicator!

We decided to go with the TEMA because as traders we love validation. What better tool for this than an indicator that smooths out 3 exponential moving averages?

We also went with 50-period moving averages to capture the bigger moves. To that end, we reduce the number of trade signals provided with this strategy.

Trade signals are generated when the fast line crosses the MACD stock indicator and the security price breaks through the TEMA.

We will exit our positions whenever we receive contrary signals from both indicators.

Although the TEMA can produce more signals in a choppy market, we will use the moving average convergence divergence to filter these down to the ones with the highest probability of success.

The image below gives an example of a successful MACD + TEMA signal:

MACD + TEMA
This is the 10-minute chart of Twitter.

In the first green circle, we have the moment when the price switches above the 50-period TEMA. The second green circle shows when the bullish TEMA signal is confirmed by the MACD stock indicator. This is when we open our long position.

The price increases and in about 5 hours we get our first closing signal from the MACD stock indicator. 20 minutes later, the price of Twitter breaks the 50-period TEMA in a bearish direction and we close our long position.

This trade would have brought us a total profit of 75 cents per share.

To learn more about the TEMA indicator, please read this article.

#4 — MACD + TRIX indicator

Building upon the concept of a triple exponential moving average and momentum, we introduce to you the TRIX indicator.

The TRIX is a nice pairing with the MACD stock indicator because it is an oscillator, but more importantly, it is a momentum oscillator. To learn more about the TRIX, please read this article.

This time, we are going to match crossovers of the moving average convergence divergence formula and when the TRIX indicator crosses the zero level. When we match these two signals, we will enter the market and await the stock price to start trending.

Exits

This strategy gives us two options for **exiting the market**:

- Exiting the market when the MACD stock indicator makes a cross in the opposite direction

This is the tighter and more secure exit strategy. We exit the market right after the trigger line breaks the MACD in the opposite direction.

- Exiting the market after the MACD stock indicator makes a cross, followed by the TRIX breaking the zero line

This is a riskier exit strategy. If there is a significant change in trend, we are in our position until the zero line of the TRIX is broken. Since the TRIX is a lagging indicator, it might take a while for that to happen.

At the end of the day, your trading style will determine which option best meets your requirements.

Here is an example of these two scenarios:

MACD + TRIX
This is the 30-minute chart of eBay.

The first green circle shows our first long signal, which comes from the MACD stock indicator. The second green circle highlights when the TRIX breaks zero and we enter a long position.

The two red circles show the contrary signals from each indicator. Note in the first case, the moving average convergence divergence gives us the option for an early exit, while in the second case, the TRIX keeps us in our position.

Using the first exit strategy, we would have generated a profit of 50 cents per share. The alternative approach would have yielded 75 cents per share.

#5 – MACD + Awesome Oscillator

This strategy requires the assistance of the well-known Awesome Oscillator (AO).

For those unfamiliar with the awesome oscillator, it is obviously an oscillator. But it's an oscillator without boundaries. It's simply the difference of a 5-period simple moving average and a 34-period simple moving average.

To learn more about the awesome oscillator, please visit this article.

We will both enter and exit the market only when we receive a signal from the MACD stock indicator, confirmed by a signal from the AO.

The challenging part of this strategy is that often we will receive only one signal for entry or exit, but not a confirming signal. Have a look at the example below:

MACD + Awesome Oscillator

This is the 60-minute chart of Boeing. The two green circles give us the signals we need to open a long position. After going long, the awesome oscillator suddenly gives us a contrary signal.

Yet, the moving average convergence divergence does not produce a bearish crossover, so we stay in our long position.

The first red circle highlights when the MACD has a bearish signal. The second red circle highlights the bearish signal generated by the AO. Thus, we close our long position.

Furthermore, notice that during our long position, the moving average convergence divergence gives us a few bearish signals. Yet, we hold the long position since the AO is pretty strong.

This long position would have brought us a profit of $6.18 per share.

Chapter 5: Is the MACD Trading Strategy appropriate for Day Trading?

The simple answer is yes; the MACD trading strategy can be used to day trade any security.

The MACD stock indicator is based on whatever time frame you are trading. Therefore, it's effectiveness or lack thereof has nothing to do with intraday trading versus daily charts.

The one thing you should be concerned about is the level of volatility a stock or futures contract exhibits. The greater the volatility, the less likely the MACD stock indicator or any other indicator, for that matter, will accurately forecast price movement.

Chapter 6: MACD vs. MA (Bonus Strategy)

How do these two indicators compliment one another?

You can use the moving average as a validation tool for the price action in conjunction with the MACD indicator.

In the below trading example of the S&P500 E-mini futures, notice how the contract performs as it approaches the 20-period moving average.

MACD vs MA

Simply wait for the security to test the 20-period moving

average and then wait for a cross of the trigger line above the MACD.

This basic strategy will allow you to buy into the pullbacks of a security that has strong upward momentum.

Chapter 7: Best MACD Trading Strategy Books

We had a tough time finding the best MACD book on Amazon. Mos were self-published. There was no obvious MACD trading strategy evangelist like John Bollinger with Bollinger Bands.

So if you are looking to dominate the space with a good book — now is the time.

However, here are a few you might consider:
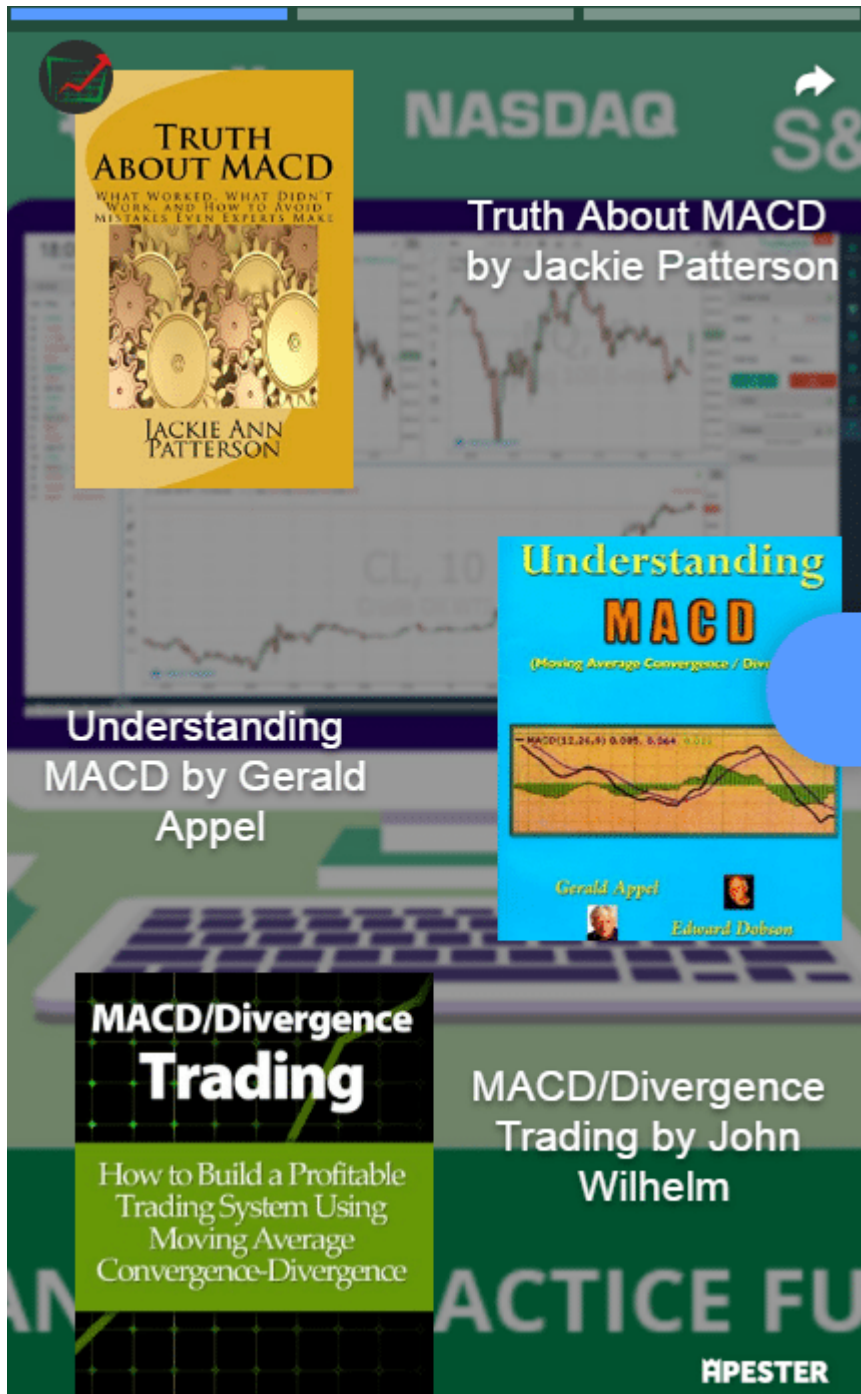
MACD Book

MACD Book

The best information on MACD trading strategy still appears in chapters in popular [technical analysis](#) books, or via online resources like the awesome article you are reading now. At any rate, I want to be as helpful as possible, so check out the below carousel which has 10 MACD trading strategy books you can check out for yourself.

To view more information about these books, please check out the external links in the [external resources](#) [3-8] section at the end of the article.

Chapter 8: Using MACD to Forecast Major Trend Changes

Whatever time frame you use, you will want to take it up 3 levels to zoom out far enough to see the larger trends. For example, if you are using a 5-minute chart, you will want to jump up to the 15-minute view.

It is extremely difficult to predict major market shifts. For example, there have been bears calling for the collapse of the current bull run in US equities for nearly every year since the market began.

With that in mind, let's look at the sell-off in early 2016 with the S&P500 E-mini Futures.

On the chart:
O 2052.75 H 2067.00 L 2035.25 C 2064.75 — -26.25 (-0.99%)
024.6625
2635.75
1903.50
1830.75

-0.6348 27.4608 28.0956

S&P 500 made a lower low while the MACD inched higher
Extreme low value in the MACD

MACD Forecasting Major Price Moves
The E-mini had a nice W bottom formation in 2016. Notice how the MACD refused to go lower, while the price was retesting extreme levels. This divergence ultimately resulted in the last two years of another major leg up of this bull run.

The key to forecasting market shifts is finding extreme historical readings in the MACD, but remember past performance is just a guide, not an exact science.

For more information on calling major market bottoms with the MACD stock indicator, check out this article published by the

Department of Mathematics from Korea University.[9]

Within the study, the authors go through painstaking detail of how they optimized the MACD stock indicator to better predict stock price trends.

In summary, the study further illustrates the hypothesis of how, with enough analysis, you can use the MACD stock indicator for macro analysis of the market.

Chapter 9: Recommendations

- We prefer combining the MACD stock indicator with the Relative Vigor Index or with the Awesome Oscillator may .
    - The RVI and the AO do not diverge greatly from the moving average convergence.
    - RVI and AO are less likely to confuse you, yet provide the necessary confirmation to enter, hold or exit a position.
- The TEMA also falls in this category, but I believe the TEMA could get you out of the market too early and you could miss extra profits.
- Regrettably, we find the MACD + TRIX indicator strategy too risky. Yet, it could be suitable for traders with a greater appetite for risk.
- All things considered, the Money Flow index + MACD generates many false signals, which we clearly want to avoid.
  Independent of these 5 strategies, our personal favorite is the bonus strategy, which combines the MACD trading strategy with the 20-period moving average.

Conclusion

We hope you've found the information in this guide helpful.

Indicators and strategies can be a bit daunting when first starting out as a trader. Yet, with the proper education and experience, they can be helpful tools to augment our trading.

As with any strategy, we recommend practicing with a [simulator](#) before putting real money to work. If you don't have a subset of trades and a known probability of success for each strategy, you're just gambling.

Here's to good fills and trading success! Stay in touch!

External References

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6. Abraham, Andrew. (2013) [MACD Trading Indicator – Follow the Trend & Where Trends Possibly Start and Stop (Trend Following Mentor)](#).
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8. Sincere, Michael. (2011) '[All About Market Indicators'](#). McGraw Hill
9. Wang, Jian & Kim, Junseok. (2018). [Predicting Stock Price Trend Using MACD Optimized by Historical Volatility](#) [Study]. [Korea University](#)
10. External Link – create the moving average convergence

divergence formula in [excel](). This one is for all you bookworms that need to see exactly how the indicator works.