Mentality Towards Technical Indicators

Some people view technical indicators as magic numbers or holy grails that would miraculously create a trading system that is wildly profitable. Here is the bad news, technical indicators are no crystal balls. They cannot predict the future or give you a secret formula to generate insane profits.

Indicators are part of the Bigger Picture

Which is better: MACD or Bollinger Bands? Which is more profitable: ADX or Williams %R?[1]

Answer: None of them.

Technical indicators are simply small components of an overall trading system, and not systems in and of themselves. They are like a couple of tools in a tool kit, not the kit itself. Comments such as: I tried Indicator X and found it was worthless or I tried Indicator Y and found it useful, make no sense. These statements imply that an indicator is the actual trading system. That is not true.

What do Technical Indicators do?

Technical indicators are math formulas that take information from the market and process them into output. Why do that? Reasons:

Simplify Selective Information

There are a lot of information in the market. At times, we may only want to view certain data. Using the appropriate technical indicator, we are able to select the relevant data we want, process them and evaluate them.

Provides Understanding and Convenience

Technical indicator allow us to understand the market better. They process information into output that tells a story of the market. Of course, this is possible without Technical indicators but it will be more tedious.

Imagine if we want to view the highs and lows of the last 30 period without technical indicators. We will have to strain our eyes to estimate 30 periods, and keep a mental note of the highs/lows, memorise that information, move on to the next period and repeat the same thing. It is inefficient and taxing.

Using a Donchian Channels (30), we can easily get the information we want.

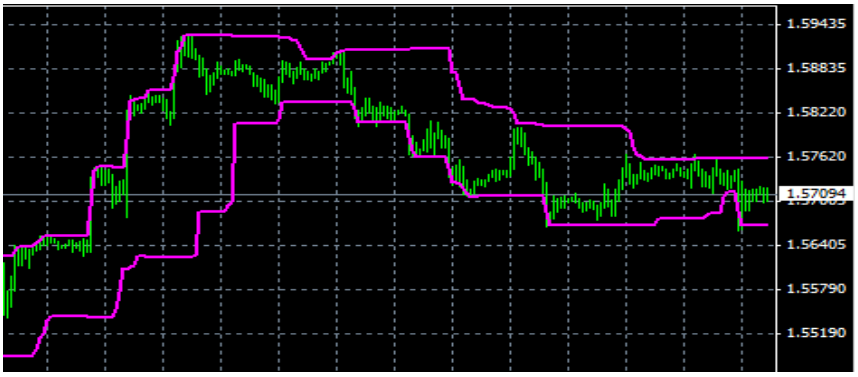

Figure 1: Purple lines represent highs and lows of past 30 periods. Distance between top and bottom lines represent 30 days high-low range.

[1] http://turtletrader.com/entry/

Easy Comparison

Using the same technical indicators on two or more charts allows us to compare information easily. For instance, in the previous example on highs/lows, we can use Donchian Channels (30) on two different assets in order to compare their 30 day high-low range. It will be insanely tedious to do this without technical Indicators.

How should we view Technical Indicators?

Technical indicators tells us a story. It is our job to interpret this story correctly. In order to do this, we need to know the math behind the indicators (more on math in the next lecture).

Let us use RSI(20) as an example. The popular advice is to buy when RSI goes below 30 and sell when RSI goes above 70. This is not accurate. I'll skip the math for now. Essentially, when RSI(20) goes below 30 (this is what they call the "oversold" level), it tells us when the market is near its low in the last 20 periods, vice versa.

However, this information does not tell me if I should be buying or selling at this level. The decision to buy or sell depends on the type of trading strategy I am employing. If I employ RSI(20) in a trending robot, I will sell when RSI(20) goes below 30. This will allow me to catch the downward trend. Similarly, if I employ RSI(20) in a retracement or mean-revering robot, I will then buy when RSI(20) goes below 30. This will allow me to position myself for a retracement.

In short, we need to 1) Interpret the information from the technical indicator objectively (without any relation to whether we should buy or sell) 2) Understand this information in relation to our robot 3) Make the most appropriate decision.

Types of Technical Indicators

There are four main types of technical indicators:

Momentum

Momentum indicators tells us if the market is starting to move in a general direction. (Eg. Moving Average, MACD)

Oscillators

Oscillators tells us if the market is near its high or lows. (Eg. RSI, Stochastic Oscillator)

Volatility

Volatility indicators gives us information about the volatility of the market (Eg. ATR, Bollinger Bands)

Volume-based

Volume-based indicators uses volume data either in a standalone manner or with other types of market data (Eg. Money Flow Index, On Balance Volume)

Application to Trading

Now that we know technical indicators are just tools and are part of the larger trading system. We need to understand how we should apply them in our robots. There are two steps:

1) Understand the inefficiency you are capturing

Once we understand the type of inefficiency we are capturing, we will be able to select the technical indicator(s) that are most suitable. For instance, if we are a mean-reversion tendencies in the AUDNZD, we will need an oscillator.

2) Select the most appropriate technical indicator and period count

Following the previous AUDNZD example, we will need to select the most appropriate oscillator for our robot. This will entail understanding the mathematical formula of our oscillators[2] (more on that in the next lecture).

Once you have decided on the technical indicator(s), you need to select the period count. Having a RSI(15) or a RSI(100) tells a completely different story. This period count depends on the inefficiency you are capturing. If you are looking at short term mean-reversion, select a shorter period count, vice versa.

Uses other than trading rules

A quick note before we end this lecture, there are others uses for technical indicators other than entry and exit rules. Most notably, many people use volatility indicators in their position sizing/money management algorithm – Eg. Our beloved BelindaSizing.

[2] This is one of the best place to understand indicators' math:
http://stockcharts.com/school/doku.php?id=chart_school:technical_indicators