Introduction to Indicators

The Difference between using Indicators and Price

When we look at classical charting, we are concerned directly with the analysis of price and, to a lesser extent, volume and open interest. When we move into the area of indicators, we cease to look at price directly, but look at using mathematical constructs which are derivatives of price. This difference leads some technical analysts into error.

The error is to regard indicators as a superior tool compared to direct analysis of price. In other words, that classical charting is somehow only an introduction to the more advanced tools called indicators. Such an extreme view is unwise. In most ways, indicators only serve to clarify what should be already obvious on the price chart. Where an analyst takes this view to the extreme that the indicator is relied upon in the face of conflicting information in the raw price chart, it is plain stupid.

The intelligent analyst uses indicators as a secondary tool to add value to the basic chart analysis. Where this is most important is that any signal given by the indicator should not be acted upon unless there is a confirming signal on the price chart. In other words, the price chart has priority over the indicator until such time as the price confirms the indicator.

In saying this, it should be recognised that some indicators give late signals, coming after the price signal, while other indicators give leading signals, coming before the price signal. It is these leading indicators where care must be taken not to anticipate price action.

Types of Indicators

A great number of mathematically based indicators have been developed in the last few decades. Some have broken new ground, while many are simply variations on a theme. It is impossible to consider them all here. It is also unnecessary, since many of the variations do essentially the same thing. What we will endeavour to do is to look at the two main types of indicators and some of the more useful of the indicators in each category.

Classical charting, using line and bar charts, are often criticised as being subjective. This element of subjectivity is seen as an evil. However, subjectivity has both negative and positive aspects.

The availability of personal computers has allowed the evolution of a series of mathematical and statistical indicators. The objectives in developing these indicators are:

- To make a precise definition of some concepts in mathematical terms
- To formulate unambiguous rules for trading with these indicators
- To define new ways of analysing price action — especially for short-term trading

In large part, indicator analysis is a way of approaching the problem of the interaction of the psychology of the analyst with the processes of analysis. There is always a very real risk that analysts will find what they are looking for when they examine a chart or an indicator. However, because

indicators are created to give signals based on the crossing of two lines or when a line turns up or down, the signals can be identified without the application of judgement and some of this problem is removed.

However, it does not solve it completely. There remains an arbitrary element in the mathematical approach, because choices still have to be made about parameters such as the number of time periods over which to calculate an indicator and the levels for overbought and oversold etc. Analysts try to overcome this by optimising these levels through back-testing numerous alternatives using past data. However, this is at best a partial solution, because over-optimising parameters means the indicator is fitted to the past data, a disadvantage because markets are constantly changing.

A more insidious problem is that not all indicator signals are equally effective as a trading tool. Thus, the idea of divergence, which is not discussed here, is a powerful one, but only some divergences lead directly to trend changes. The same applies to other indicator signals from time to time. There is therefore scope for the analyst to override or filter the indicator signal where it is contrary to the preconceived view of the analyst. Where multiple indicators are used, there is also the temptation to ascribe weight to each indicator, depending upon how well it is confirming the analyst's view.

Indicator analysis has approached the task of analysing the markets from two directions, giving rise to the two types of indicators:

> Firstly, there is a group of indicators that seek to define trend objectively. These are called trend following indicators. Essentially, this group of indicators is designed to smooth price data so that a trend can be represented as a line. They tend to be trailing indicators. By far the most important group of trend following indicators is moving averages. Their purpose is to detect the beginning and ending of trends.

> Secondly, there is a group of indicators that seek to measure the speed at which prices are changing. These are called momentum oscillators. The concept here is that momentum can be measured, allowing us to detect changes in the speed or direction of price change. They tend to be leading or coincident indicators. By far the most important group are constructed as oscillators. They are so designed in order to detect the swings of price within a trading range or a trend. Their purpose is to time trades as price swings between under and over valuation.

As their name implies, trend following indicators are only useful in trends and will give poor results, or even losses, in trading ranges. Momentum oscillators can also be used to trade the swings within, and to warn of the end of, trends. However, their main use is in trading ranges, where trend following indicators are too slow to detect the shorter-term swings.

Generally, the value of a trend following indicator is expressed in the same units as price. It is often, but not exclusively, drawn as a line on the price chart itself. Some signals are derived from the interaction of the price and the trend following indicator line.

On the other hand, a momentum oscillator will generally swing either side of a centre or zero line. Its value is always different to the price scale. It is almost always drawn in a separate sub-chart. Some oscillators consist of one line, with signals generated by patterns it forms or by it swinging above and

below reference values. Other oscillators consist of two lines and the interaction of the two lines generates some of the signals.

Most indicators will fall into one or other category, but there is one important exception. That exception is the Moving Average Convergence Divergence (MACD). This is usually classified as a trend following indicator. However, it is a sophisticated indicator that is also an oscillator, although it does not swing between any set maximum and minimum levels. The MACD can be used as both a trend following indicator, and a momentum oscillator.

For many years, indicators were calculated by hand and drawn on or below the price chart. However, in the past two decades, the personal computer has replaced hand drawn charts. Its principal advantage is the speed with which many charts can be constructed and mathematically complex calculations made. Its principal disadvantage is that much of the "feel" for the market that was developed through keeping hand drawn charts over time has been lost.

In practice, indicators will be calculated and drawn by a computer and an analyst should be able to accept the integrity of the software used. The important thing is to understand what the indicator is measuring and how the indicator is interpreted.

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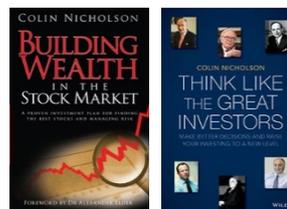
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