Indicators Part 2

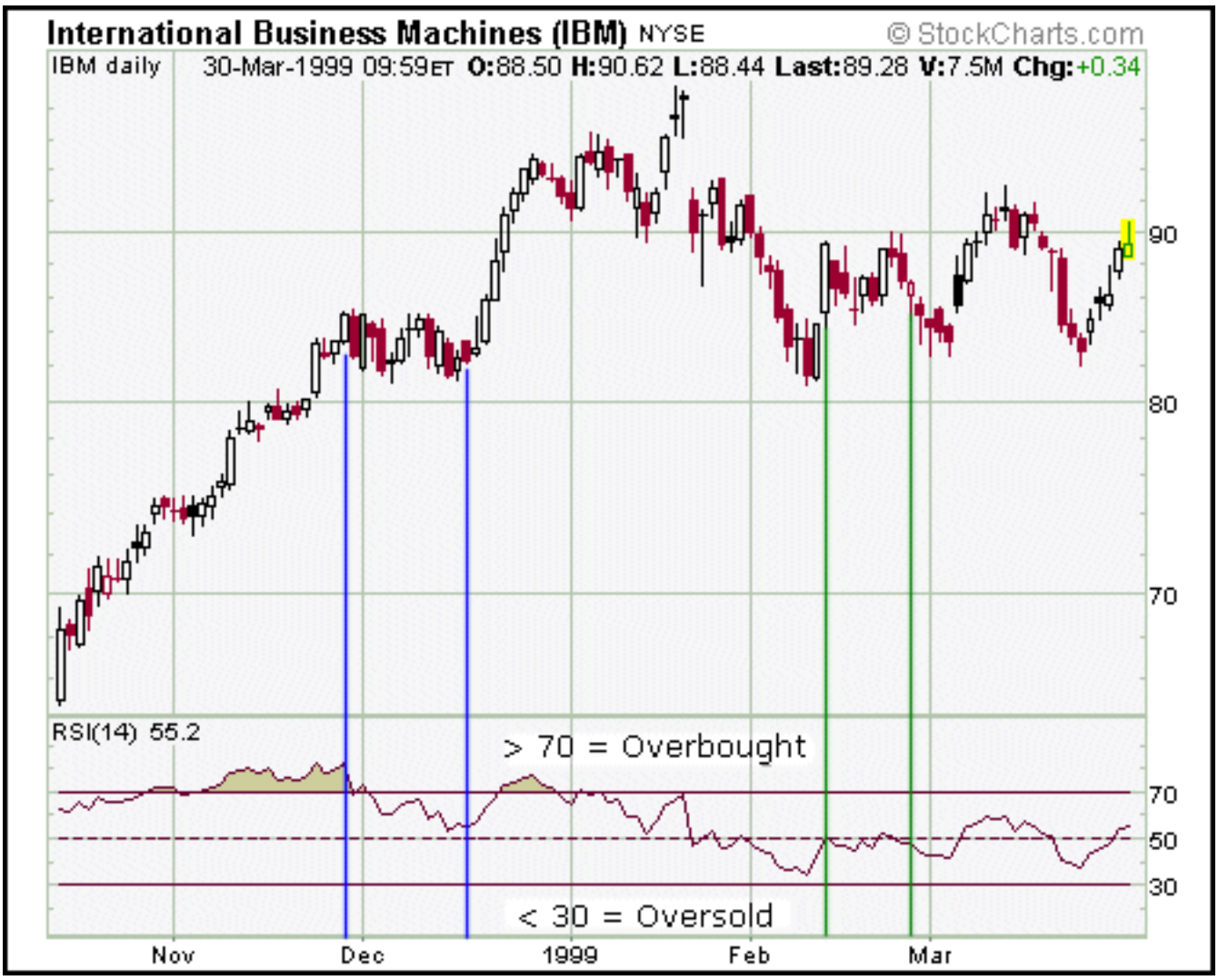
Leading Indicators

As their name implies, leading indicators are designed to lead price movements. Most represent a form of price momentum over a fixed look-back period, which is the number of periods used to calculate the indicator. For example, a 20-day Stochastic Oscillator would use the past 20 days of price action (about a month) in its calculation. All prior price action would be ignored. Some of the more popular leading indicators include Commodity Channel Index (CCI), Momentum, Relative Strength Index (RSI), Stochastic Oscillator and Williams %R.

Momentum Oscillators

Many leading indicators come in the form of momentum oscillators. Generally speaking, momentum measures the rate-of-change of a security's price. As the price of a security rises, price momentum increases. The faster the security rises rises (the greater the period-over-period price change), the larger the increase in momentum. Once this rise begins to slow, momentum will also slow. As a security begins to trade flat, momentum starts to actually decline from previous high levels. However, declining momentum in the face of sideways trading is not always a bearish signal. It simply means that momentum is returning to a more median level.

RSI



Momentum indicators employ various formulas to measure price changes. RSI (a momentum indicator) compares the average price change of the advancing periods with the average change of the declining periods. On the IBM chart, RSI advanced from October to the end of November. During this period, the stock advanced from the upper 60s to the low 80s. When the stock traded sideways in the first half of December, RSI dropped rather sharply (blue lines). This consolidation in the stock was quite normal and actually healthy. From these lofty levels (near 70), flat price action would be expected to cause a a decline in RSI (and momentum). If RSI were trading around 50 and the stock began to trade flat, the indicator would not be expected to decline. The green lines on the chart mark a period of sideways trading in the stock and in RSI. RSI started from a relatively median level, around 50. The subsequent flat price action in the stock also produced relatively flat price action in the indicator and it remains around 50.

Benefits and Drawbacks of Leading Indicators

There are clearly many benefits to using leading indicators. Early signalling for entry and exit is the main benefit. Leading indicators generate more signals and allow more opportunities to trade. Early signals can also act to forewarn against a potential strength or weakness. Because they generate more signals, leading indicators are best used in trading markets. These indicators can be used in trending markets, but usually with the major trend, not against it. In a market trending up, the best use is to help identify oversold conditions for buying opportunities. In a market that is trending down, leading indicators can help identify overbought situations for selling opportunities.

With early signals comes the prospect of higher returns and with higher returns comes the reality of greater risk. More signals and earlier signals mean that the chances of false signals and whipsaws increase. False signals will increase the potential for losses. Whipsaws can generate commissions that can eat away profits and test trading stamina.

Lagging Indicators

As their name implies, lagging indicators follow the price action and are commonly referred to as trend-following indicators. Rarely, if ever, will these indicators lead the price of a security. Trend-following indicators work best when markets or securities develop strong trends. They are designed to get traders in and keep them in as long as the trend is intact. As such, these indicators are not effective in trading or sideways markets. If used in trading markets, trend-following indicators will likely lead to many false signals and whipsaws. Some popular trend-following indicators include moving averages (exponential, simple, weighted, variable) and MACD.

S&P 500

The chart above shows the S&P 500 with the 20-day simple moving average and the 100-day simple moving average. Using a moving average crossover to generate the signals, there were seven signals over the two years covered in the chart. Over these two years, the system would have been enormously profitable. This is due to the strong trends that developed from Oct-97 to Aug-98 and from Nov-98 to Aug-99. However, notice that as soon as the index starts to move sideways in a trading range, the whipsaws begin. The signals in Nov-97 (sell), Aug-99 (sell) and Sept-99 (buy) were reversed in a matter of days. Had these moving averages been longer (50- and 200-day moving averages), there would have been fewer whipsaws. Had these moving average been shorter (10 and 50-day moving average), there would have been more whipsaws, more signals, and earlier signals.

Benefits and Drawbacks of Lagging Indicators

One of the main benefits of trend-following indicators is the ability to catch a move and remain in a move. Provided the market or security in question devlopes a sustained move, trend-following indicators can be enormously profitable and easy to use. The longer the trend, the fewer the signals and less trading involved.

The benefits of trend-following indicators are lost when a security moves in a trading range. In the S&P 500 example, the index appears to have been range-bound at least 50% of the time. Even though the index trended higher from 1982 to 1999, there have also been large periods of sideways movement.

From 1964 to 1980, the index traded within a large range bound by 85 and 110.

Another drawback of trend-following indicators is that signals tend to be late. By the time a moving average crossover occurs, a significant portion of the move has already occurred. The Nov-98 buy signal occurred at 1130, about 19% above the Oct-98 low of 950. Late entry and exit points can skew the risk/reward ratio.

The Challenge of Indicators

For technical indicators, there is a trade-off between sensitivity and consistency. In an ideal world, we want an indicator that is sensitive to price movements, gives early signals and has few false signals (whipsaws). If we increase the sensitivity by reducing the number of periods, an indicator will provide early signals, but the number of false signals will increase. If we decrease sensitivity by increasing the number of periods, then the number of false signals will decrease, but the signals will lag and and this will skew the reward-to-risk ratio.

The longer a moving average is, the slower it will react and fewer signals will be generated. As the moving average is shortened, it becomes faster and more volatile, increasing the number of false signals. The same holds true for the various momentum indicators. A 14 period RSI will generate fewer signals than a 5 period RSI. The 5 period RSI will be much more sensitive and have more overbought and oversold readings. It is up to each investor to select a time frame that suits his or her trading style and objectives.

In Part 3, we look at Oscillators in depth, and address the various methods used to generate buy and sell signals. Also, we analyze the mechanics of a very special oscillator that is neither a pure trend follower nor a leader, but part of both camps.

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