→ **T E C H N I C A L   A N A L Y S I S**

# Trading with RSI

**W**hile the use of Relative Strength Index (RSI) to get technical buy and sell signals in a range-bound market is well understood, the use of this indicator in a trending market is more intricate. This article covers the use of RSI over the three types of market conditions namely uptrend, downtrend and range-bound or sideway market. We will explore the concept of support and resistance levels, which can be used to enhance the accuracy of the RSI signals.

RSI developed by J. Welles Wilder, is a powerful indicator used to measure the velocity of the price movements. Unlike other momentum indicators such as Stochastic that have wide variations even with little overall price movements, RSI is immune to such drawback due to the way its value is calculated. In brief, RSI values are affected by the number of days that the price closes up and the number of days that the price closes down over a certain time period "t". Commonly used periods for t are 14 and 21 days. In this article, we will use t = 14, the period originally proposed by Wilder.

## RSI IN A SIDEWAY MARKET

Technical signals are obtained by setting two levels, typically a high level at 70 and a low level at 30 where RSI above the 70 level is considered overbought condition while RSI below 30 is considered oversold condition. An example of the application of RSI is shown in Figure 1. We observe that during the August 2006 to December 2006 period, SembMar was trading within the range of $3.20 to $3.58. In such a sideway market that is showing no bias of significant upward or downward price movement, RSI works quite well in identifying the tops (RSI in overbought region) and bottoms (RSI in oversold region) of the price movement.

In cases where the price of the stock is trending upward or downward, the overbought and oversold levels have to be changed. This is because RSI being an oscillator that oscillates between 0 and 100 will stay high in an up-trending market as there are consistently more days where prices go up as compared to days when prices go down. Conversely in a down-trending market, we expect RSI to stay at low values. Using the same values of 70 for overbought level and



Figure 1: Example of using RSI in a sideway market



Figure 2: Example of oversold level at 30 for a stock in an uptrend



Figure 3: Example of oversold level at 40 for a stock in an uptrend

30 for oversold level will mostly result in wrong signals such as entering and exiting too early or no signal. Such a scenario is illustrated in Figure 2 where RSI did not even drop below the 30-level as Capitaland trended strongly from $2.80 all the way to $5.00. In this case, using the 30-level did not generate any entry signal for a long position. Moreover keeping the 70-level causes Capitaland to be in overbought condition for long periods of time.

Moving upward both the overbought and oversold levels to 80 and 40 respectively as illustrated in Figure 3 now provides clearer trading opportunities. In such up-trending stocks, notice that the oversold signals actually provide opportunities to enter for a long position during the short-term downtrend (retracement) in the longer uptrend price movement.

On the other hand, for RSI trading opportunities for down-trending stocks, the overbought and oversold levels have to be shifted downward to 60 and 20 respectively.

The examples of setting different overbought and oversold levels for different market conditions highlight the importance for technical analysis practitioners to adapt their use of technical indicators and indicator settings for different market conditions.

To trade solely based on RSI is not sufficient. Other concepts of technical analysis such as candlestick formations, trendlines and other western indicators must be added to the trading strategy to serve as confirmation of the signals and to increase the accuracy of the trading signals. Next, we will employ the concept of support and resistance to confirm the entry and exit signals generated by RSI.
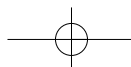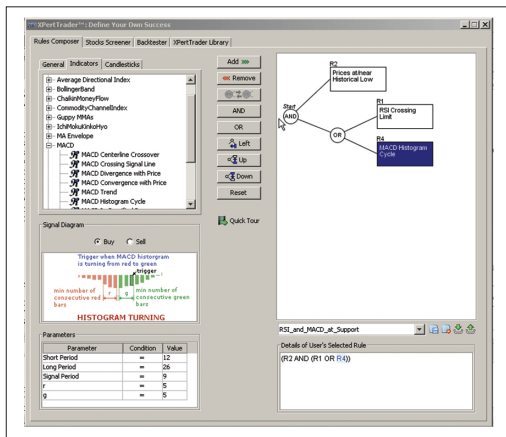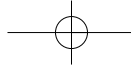
Figure 6: ChartNexus XPertTrader screens the whole market for technical signals



Figure 4: Example of support and resistance levels

## SUPPORT AND RESISTANCE

Support and resistance are very important concepts in technical analysis. While it is easy to understand, its application is usually not so straight-forward owing to the many support and resistance lines that can be drawn on any given chart. On the price chart, we will emphasise on lines that have more contact points with the price structure. Another important point to note is that a resistance line that was providing resistance to price movement will provide support if this level is broken. Conversely a support line will become a resistance line once it is broken. This is illustrated in Figure 4.

## APPLICATION OF RSI WITH SUPPORT AND RESISTANCE

To increase the effectiveness of the technical signals, we will buy near support level while RSI is in oversold condition. Take note that the trend must first be determined in order to select the appropriate values for the overbought and oversold levels. Figure 5 illustrates the application of this simple strategy on SGX. As SGX is in an uptrend, the overbought and oversold levels are set to 80 and 40 respectively. Two excellent bullish technical signals were generated in July and December 2006 when RSI was in oversold region while the price was near the support levels.

In fact, the above scenarios can be easily captured using an automated system, saving you significant amount of time and hunting down stocks, which present excellent trading opportunities. One such software is ChartNexus XPertTrader (see Figure 6) that can be used to automatically screen the market for stocks that have RSI, MACD, Stochastic bullish and bearish signals.

While the sections above introduce you to a simple strategy of using RSI signals coupled with the support and resistance concept, it is important that you still adopt proper money management, stock selection and rotational plays techniques in addition to the timing analysis showcased in this article. **SI**
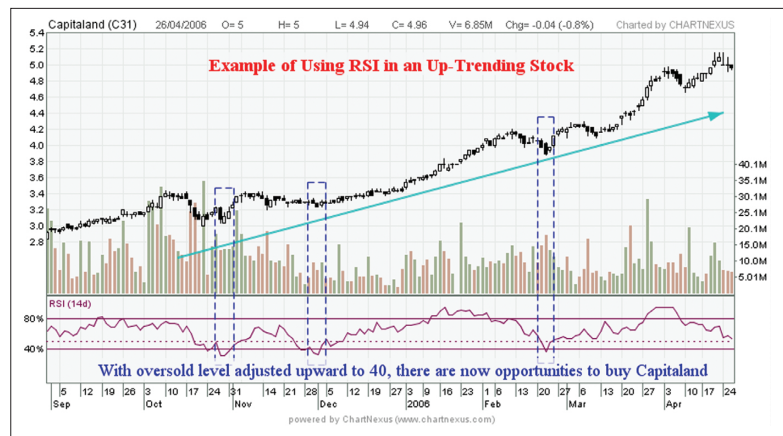


Figure 5: Example of the application of RSI and support level to identify bullish signals

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