Volatility Breakout

Background

Academic theory suggests that while price is neither cyclical nor forecastable, volatility is both (Bollinger, 2002). Based on this principle, there are several ways in which volatility breakouts are identified and traded.

John Bollinger (2002) in his book '*Bollinger on Bollinger Bands'*, says that after a lot of investigation, he considers the volatility breakout system the best for trading. Other famous American traders, including Larry Williams, Sheldon Knight and Toby Crabel have also based some of their more well known work on volatility breakouts. Crabel's well known book '*Day Trading with Short Term Price Patterns and Opening Range Breakout*' which is out of print, sells for £325 secondhand at Amazon.co.uk. I have identified three methods of trading using volatility. These are based on: Average True Range (Wilder (1978)), Bollinger Bands (Bollinger (2001)) and Crabel's Opening Range Breakouts.

This strategy is based on Bollinger Bands which in many respects is similar to Average True Range. Whilst Crabel's work is not covered here, how to combine his Opening Range Breakouts with Bollinger's Volatility Breakout is suggested.

When a market consolidates, buyers and sellers reach an equilibrium price level and the trading range tends to narrow. When new information enters the market-place the market moves away from this equilibrium point. An increase in price momentum attracts market participants. The often aggressive sudden movement in price aggravates the existing supply / demand imbalance. This is the principle of volatility in respect to trading the financial markets.

We can tell when the market is approaching the end of contraction when the Bollinger Band width narrows. We then know that a potential breakout exists. However, it is difficult to predict the direction of the breakout because buyers and sellers are in balance. All we can do is prepare for increased volatility or range expansion.

Volatility breakouts often create trend days. A trend day occurs when there is an expansion in the daily trading range and the open and close are near opposite extremes. The first half-hour of trading often comprises less that 10% of the day's total range; there is little intra-day retracement. A trend day can occur in either the same or the opposite direction to the prevailing trend on daily charts. The critical point is that the increased spread between the high and low of the daily range offers a trading opportunity from which large profits can be made in a short time.

The good news is that breakout strategies have a high win / loss ratio. The bad news is that whipsaws can be brutal making it sometimes difficult to trade. This is not a system for the beginner.

Description
A definition of low volatility, for trading this strategy, is when the Bollinger Band width is at its lowest low value (LLV) for 120 days (approx. 6 months). The time period variable may be altered, however 120 days seems to be an optimum period giving good results. We are looking to identify the break out from this LLV when a strong trend often forms.

Set-up
- The Bollinger Bands will form their narrowest level for 120 days.
- Enter the trade in the direction of the trend. Below are some other aspects to consider prior to taking your position.
    - Look for the first strong day
    - Is volume picking up on up days?
    - Is Accumulation / Distribution turning up (and other volume indicators)?
    - Does the range narrow on down days?
    - What is the relation of the open to the close?
    - News is often the catalyst
    - Consider where the stock is in terms of long, medium, short trend
    - What is the index / sector doing?
    - What is the one week and one hour chart doing?
- As well as considering the above look for other trading patterns such as 'The Holy Grail' (This is a Lynda Bradford Raschke trade which basically is a bounce off the 20 day exponential moving average). What do they say? Further, remember as a short term trader to be bullish above the 20 period moving average and bearish below the 20 period moving average.
- Place your buy (sell) just above the previous day's high (low).
- If you are in profit at the end of the day carry over the trade.
- Exit the trade if you are in loss at the end of the trading day or your stop loss has been triggered – suggested stop loss is previous day's low.
- When a powerful trend begins, volatility expands so much that the lower band will turn down in an upward trend or the upper band will turn up in a down trend. This is an expansion. When this reverses there is a high probability that the trend is at an end.

Duration of Trade
This trade may set up a violent breakout which goes on to form a substantial trend. It is easy to make a profit, but the trade is often exited too early. Use trend based indicators to 'ride' the trend. Remember; be aware of the false breakout!

Significant Indicators
Bollinger's BandWidth indicator is useful to visually see the width of the band. This can be seen in the examples below. A useful addition to the BandWidth indicator is a 5 day moving average to see whether the band is expanding or contracting. Note: if the indicator is going up it means the Bands are widening. This is positive in both an up and down trend.

For a more aggressive approach to this strategy the standard deviation can be set at 1.5 and the moving average used can be 15 days. Also, if no signals are given for 120 days, a 60 day look-back period can be used.

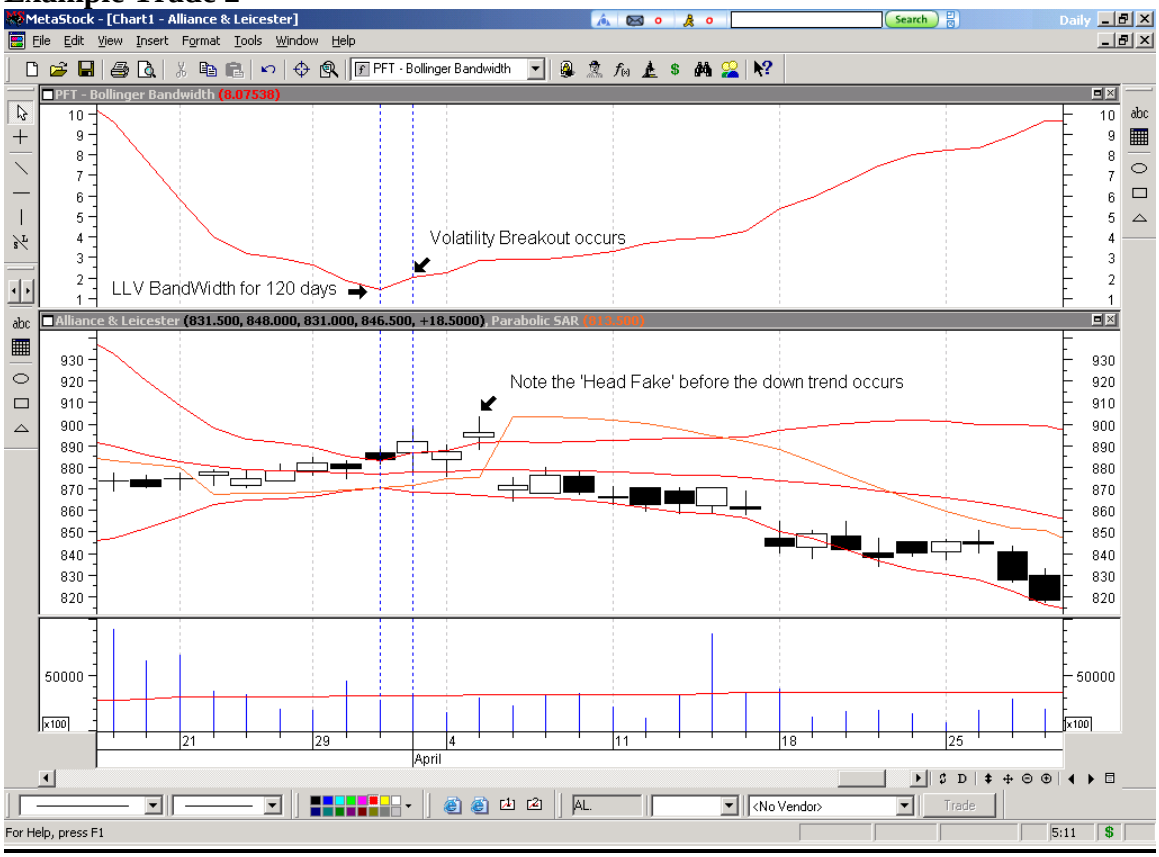
What Bollinger refers to as 'Head Fakes' (an ice hockey term) may often occur, fooling you to think the stock is about to break out in a downward trend when in actual fact it is breaking out in an upward trend and visa versa. Look at historical action for the stock in question. Have head fakes occurred in the past? Example Trade 2 demonstrates this.

Crabel's Opening Range Breakouts may be traded when they occur at a Volatility Breakout. This can be very effective as we are identifying periods of historically low volatility and at the same time we are also identifying these same periods with pattern recognition. Conners and Raschke (1995) combined something similar with Crabel's Narrow Range Breakouts.

Example Trade 1

In the above example the lowest low volatility value (LLV) for 120 days is indicated. If you didn't believe the Volatility Breakout was an excellent trade, hopefully after seeing this, you will change your mind. The Bandwidth indicator is an excellent indicator to measure and visually see the bands expansion. Note how the lower band turns down confirming the upward trend.

Example Trade 2



In the above it can be clearly seen on the BandWidth indicator that it has reached the lowest low volatility for 120 days. This is a difficult trade due to the fact that it looked from the chart that the breakout would most probably occur in an upwards direction. If the other data had made you draw the same conclusion you may have well been stopped out. You would then have entered the trade short and hopefully pulled back your initial loss – plus some more!

References

- Bollinger , John (2001) 'Bollinger on Bollinger Bands', McGraw Hill.
- Conners, Laurance A. & Raschke, Linda Bradford (1995) 'Street Smarts', M. Gordon Publishing Group.
- Wilder Jr., J. Welles (1978) 'New Concepts in Technical Trading Systems', Trend Research.
- Crabel , T 'Opening Range Breakouts (8 papers)', Stocks and Commodities Magazine.