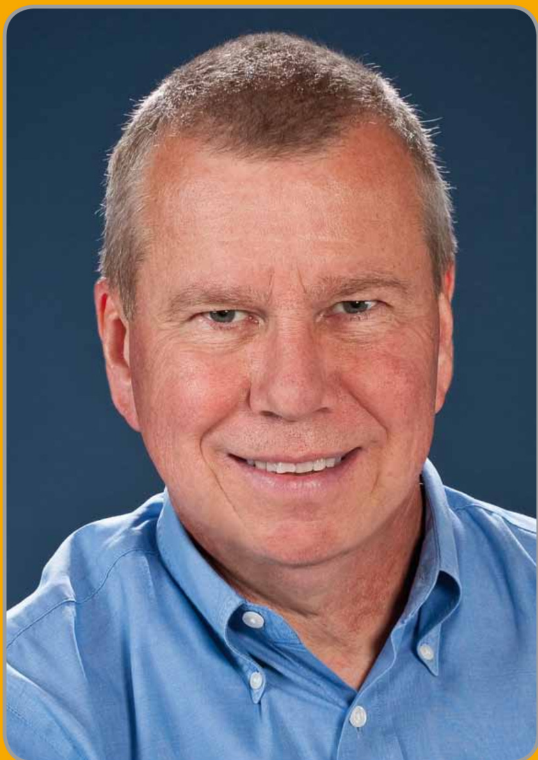


John Bollinger

Take Advantage of Rational Analysis

John Bollinger is president and founder of Bollinger Capital Management. As a dyed-in-the-wool analyst, he has developed a number of well-known analytical tools in his career – above all Bollinger Bands, which are now included as a standard tool in virtually any software. His book "Bollinger on Bollinger Bands" was published in 2001 and has been translated into eight languages. In addition, Bollinger publishes a monthly financial newsletter with weekly updates, the Capital Growth Letter. This includes market commentaries, analyses and investment ideas for private investors who pursue a technically-oriented investment strategy. Furthermore, Bollinger has founded, among other things, the BollingerBands.com, BollingerOnBollingerBands.com and BBforex.com websites. He graduated from the School of Visual Arts in New York with a degree in Cinematography, but a short time later started analysing financial markets. Today, he is a CFA (Chartered Financial Analyst) and CMT (Chartered Market Technician) and is involved in the Market Technicians Association Education Foundation, serving as a board member. In the past, he served as a director of the Market Technicians Association (MTA) as well as with the International Federation of Technical Analysts (IFTA). He has received various awards for his life's work, such as the Lifetime Award for Outstanding Achievement in Technical Analysis of the Technical Securities Analysts Association of San Francisco and the 2005 Annual MTA Award for Outstanding Contribution to the Field of Technical Analysis. John Bollinger is also known to the public for his many years as a market analyst and commentator on the FNN and CNBC television channels. In addition, he is a popular speaker at financial conferences around the world. We met the busy market specialist for an interview.

TRADERS´: Mr. Bollinger, you went into the financial industry as an outsider. Can you tell us how you came into contact with the stock market in the first place?
John Bollinger: That is right; initially I did something completely different. I studied cinematography and worked afterwards in the film industry. Overall, I spent ten years of my life in this industry. I came into contact with the stock market when my mother retired and was looking for someone to look after her retirement portfolio. So I became the one to do that job. During that time I studied everything I needed to know about the stock exchange, which meant a lot of reading but obviously also enabled me to learn a lot. I have also studied how to identify good companies based on fundamental criteria, but I have never really warmed to that subject. Over time, it was the technical perspective of the markets that I became increasingly interested in and I realised that this type of analysis suits me better than fundamental analysis.

TRADERS´: Do you remember your first trade?
John Bollinger: Of course I do. My first trade was the perfect beginner's trade, and I will also tell you why. As a teenager I had received Fruehauf Corporation shares from my grandfather and I held them for many years. This trade taught me that a stock is by no means bound to go up over the long term. It was a total loss which from the start sensitised me to the risks inherent in the business of speculation – which is exactly what beginners need. If the first trade is a big win, there is a danger that you will overestimate yourself and subsequently commit big mistakes. A negative experience at the very beginning may, as it were, be a huge win in the long term.

TRADERS´: What was the most important thing you learned on your way to becoming a professional trader?
John Bollinger: I can tell you exactly what that was: discipline. I believe that ultimately it all comes down to that. I can remember a friend who was basically good at what he did. However, he tended to be impatient and to listen to what others said. In my opinion, this friend's lack of discipline caused him to never have any success implementing his ideas. I have developed the discipline to enter the markets every day and engage in a struggle to manage complications, while proceeding in a focused and disciplined manner. I do this every day and I think that this is exactly what matters: You just have to go through with your plan day by day. That is the difference between successful traders and those who would very much like to be, but only emulate others all the time.

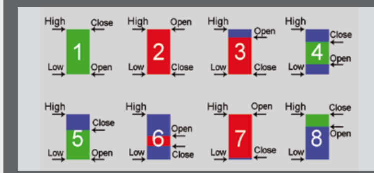
TRADERS´: Please tell us how you came up with the idea to develop your Bollinger Bands.
John Bollinger: In general, Bollinger Bands have been plotted in charts since the 1930s. The emphasis here is on „plotted"; so this was done for many decades by hand. For this reason, everything had to be very simple, because otherwise it would not have been possible and relevant to practical applications.

I can remember the story of a trader named Wilfried Lideaux who created very simple bands at the highs and lows of an index in the 1930s. The whole thing was similar to a trend channel and was based on monthly data. Based on these bands, he made his buying and selling decisions for swing trades. As far as I can remember, he called his strategy, the „Twinline Trading System".

Later, bands were set manually by using moving averages, an example of which is shown in Figure 1. So you just calculate a 10-period moving average, for example, and then shift it up or down by a fixed percentage.

Bollinger Bars

John Bollinger has developed a special type of chart presentation, as shown in Figures 3 to 5. As is usual with candlesticks, open, high, low and close are shown in each case. A green marker means that the close was above the open. Conversely, a red marker stands for a close below the open. Blue markers represent the upper and lower shadows outside the traditional body of the candle.



F1) Simple Bands (Envelopes)

Figure 1 shows the S&P 500 future with simple envelopes. The bands develop by a moving average (dotted centre line) being shifted up or down by a fixed percentage. A 10-period MA has been used here that was shifted by one per cent in each case.

Source: www.tradesignalonline.com

This method of calculating bands is now called Moving Average Envelopes or, simply, Envelopes. Everything that is within the bands can be interpreted as normal market noise, and only when the bands are touched or exceeded are there any significant deviations.

However, there is one big problem with these simple bands: What percentage is the right one with this shift? This is where psychological aspects creep in because traders can always set the bands in such a way that there is currently a good fit. So what is needed here is a method for automatic standardisation and scaling.

TRADERS´: Why are the Bollinger Bands better?
John Bollinger: For the Bollinger Bands, I have introduced the scaling based on standard deviation. This may seem obvious from today's perspective, but at that time it was not. Standard deviation is a well-known statistical measure that describes the distribution of data around its mean value. In the default setting of the Bollinger Bands, a 20-period moving average is used and in each case the twofold standard deviation is removed upwards and downwards. The 20-period moving average represents the centre line in the indicator and the removal of the twofold standard deviations causes the upper and lower bands to materialise.

As market volatility is constantly in flux, so is the width of the bands. So if things are quiet and there is little fluctuation of prices, the bands are close together. In turbulent times, however, they expand quickly. Basically, this causes an automatic adjustment to market conditions. This is important since volatility behaviour is by no means linear, but occurs in so-called "clusters". So volatility itself is volatile, but may be higher or lower than average over a longer period of time. By the way, in 2003 Robert Engle and Clive Granger received the Nobel Prize for their research, based mainly on the fundamental observation that volatility is volatile.

Traders can set the multiple by which the standard deviation in the Bollinger bands is shifted up or down. I have chosen the multiple of two, since this is the range of roughly 95 per cent of all price movements within the bands. The higher the multiple chosen, the less likelihood there is that one of the bands is breached. So apart from the multiple of standard deviation everything is automatically calculated, which means that it is hardly possible any more for traders to "talk up" the chart. In addition, the Bollinger Bands show, on a relative basis, whether the current price quote is high or low. How to interpret this, is of course, another story.

TRADERS´: What do you mean by this? Are the bands misinterpreted by some traders?
John Bollinger: Some people oversimplify things and think that the breach of the upper band is automatically a sell signal and the breach of the lower band automatically a buy signal. That, of course, is wrong and contradicts the basic idea just mentioned. As I said, the bands show relative reference points to determine whether prices are currently high or low.

However, there are trends in the markets, as we all know. So prices may be relatively high (uptrend) or relatively low (downtrend) over a longer period of time. For this reason, the interpretation of the bands is another story, since the chart must be part of the context. So while reaching the lower Bollinger Band within an established sideways market may be a good buy signal, the same signal within an overall downward trend may be the trigger for a momemtum short trade.

TRADERS´: How can traders recognise that there is a trend market?

F2) Trade at the Centre Line

Here you can see a nice opportunity for an intraday trade. After a strong opening the S&P 500 future returns to the centre line of the Bollinger Bands (i.e. the 20-period MA). A hammer is formed in the 10-minute chart, which confirms the centre line as support and offers a great entry into a long trade.

Source: www.tradesignalonline.com

F3) W Bottom at the S&P 500

Figure 3 shows the chart of the S&P 500 for the period of December 2007 to June 2008. The Bollinger Bands and the %b indicator are plotted. While the market reaches new lows in March 2008, this movement is not confirmed by the %b indicator. This offers a good long entry. Such divergences are part of John Bollinger's favourite setups.

Source:www.bbands.com

John Bollinger: To do that, traders should consult additional indicators. The Average Directional Movement Index (ADX) developed by Welles Wilder is particularly suitable for this. You can also combine the Bollinger Bands well with the Moving Average Convergence/ Divergence (MACD), or with an indicator that shows the ascending slope of any moving average.

TRADERS´: What is the recommended setting for Bollinger Bands?
John Bollinger: As I said earlier, the default setting is a 20-period moving average plus/minus twice the standard deviation. In principle, these parameters may of course be varied. Over the years I have found that in short-term trading, for example, it makes sense to choose a shorter moving average so that the Bollinger Bands are even more responsive to rapid changes in trend. For starters, however, the default setting is ideal and many traders go on to use it later as well.

TRADERS´: Do you remember any extraordinarily large profits in your trading career?
John Bollinger: I have been trading full-time since 1980 and have made countless trades. I can remember a few big wins and losses, but not in detail any more. I used to trade a lot of options and there have also been gains of several hundred per cent. However, I have always held several positions in a portfolio so that the overall performance has never been extremely good or bad. Today my trading focuses primarily on equities and I do not specialise in US stocks, but look out for opportunities worldwide.

> “There is a war between Fundamental and Technical Analysis.”

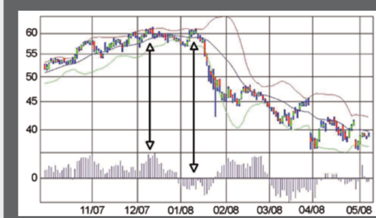
TRADERS´: Can you tell us about your concept of “Rational Analysis”? How is it different from Technical and Fundamental Analysis?
John Bollinger: First of all, both technical analysis and fundamental analysis are very valuable. There is, however, a kind of intellectual war between the two disciplines – one side simply cannot and will not understand the other. This divide is of course an obstacle when it comes to finding good setups to trade. In the end it is about filtering out the best opportunities, and for that you should consider all types of analysis. For example, you could also conduct a technical analysis of the fundamentals. So if we have time series on these data, why not just create a chart analysis or add a moving average?
By the way, besides technical and fundamental analysis, there is now behavioural and quantitative analysis. When I developed the concept of rational analysis for the first time, those two novel methods of analysis did not yet exist. Overall, it is therefore possible for four dimensions of analysis to be included in your trading. As a result, it is also necessary to see these different dimensions relative to one another and to classify them, which is perhaps the greatest achievement of traders themselves. Altogether, what I call rational analysis is that you do not just stick to one method of analysis, but reasonably incorporate all the approaches.

TRADERS´: How do you implement a combination of different methods of analysis?
John Bollinger: I like to combine fundamental with technical

F4) Breakout at Apple

Here you can clearly see that breaking through the upper band need not be a sell signal at all. It may as well be a buy signal, especially for strong stocks like Apple (breakout in March 2008).
Source:www.bbands.com

F5) Divergence at Merck & Co (MRK)



This shows the Merck & Co chart for the period of October 2007 to June 2008. In the chart you can see the Bollinger Bands and the 21-day Intraday Intensity Index. In August 2008, when prices touched the upper Bollinger Band and the Intensity Index clearly diverged from the last high in July, a good opportunity was offered for a short trade.
Source:www.bbands.com

analysis by initiating at least a two-stage process to arrive at my trading decisions. First, I use a screener which allows me to filter out the stocks with the best indices, based on a variety of criteria. This fundamental-quantitative approach enables me to reduce the initially vast universe of shares to just a few stocks. In a second step, I take a look at the stocks thus selected and trade them according to technical conditions. At this point I may also include aspects of mass psychology, which means that I have incorporated all four above-mentioned methods into my type of analysis.

TRADERS´: What is your personal trading edge?
John Bollinger: As mentioned earlier, I think discipline is crucial. One of my mentors in the early years once told me that you have to develop and implement a good system, and that one should stay with it. There are many different systems and ways that you can be successful. A real winner not only knows that, but also trades accordingly – every day. This is what most people cannot manage to do. So I believe that my big advantage is that I have been doing all this trading here for 31 years.

Another advantage, of course, is that by now I have acquired substantial knowledge of all sorts of aspects related to technical and fundamental analysis and that I have again and again found this very helpful in my trading decisions. I have read many old books and learned from the old masters of trading. Many of these techniques are forgotten today, but some of the ideas can be really valuable.

TRADERS´: What role does volume play in your trading?
John Bollinger: I rather like using volume. Many indicators can be calculated in accordance with a volume-weighted version, and that is why I have used them the most. The advantage is that volume represents a piece of information that is not necessarily directly connected to price. Those indicators, however, that are calculated from prices are always directly linked to price. For this reason, it is also difficult to use many of the indicators with the aim of filtering out the best trades. The problem is referred to by scientists as "multicollinearity". So if I use a momentum indicator to "improve" the signal of another momentum indicator, this will practically be completely useless and only causes more confusion. So you should use several indicators that are largely independent of each other, and volume is perfect in this light. However, I only know a few people who fully include volume, which is something that I cannot quite understand.

TRADERS´: So on the one hand, you are a systematic trader and on the other hand, a discretionary one?
John Bollinger: I would say that I am both. In fact, I am just as much one as I am the other. On the one hand, I do quantitative screening, and on the other hand, I choose my actual trades manually. This combination of filtering and intuition is very useful for me. It allows the weaknesses of both methods to more or less cancel each other out.

TRADERS´: Do you combine your Bollinger Bands with relative-strength approaches?
John Bollinger: I am really a fan of relative-strength strategies. What I mean by relative strength is not the Relative Strength Index (RSI), but rather Levy's actual relative strength (RS) of a share vis-à-vis the market. I usually choose my shares by this method. Of particular interest are situations in which a stock with high relative strength moves into a consolidation and then breaks out again upwards within a small channel. Sometimes I watch the news, too. If the stock, for example, is currently consolidating and bad news is being announced that does not cause the share to fall or only

Info

Bollinger %b Indicator
This indicator developed by John Bollinger describes the position of the closing price in relation to the Bollinger bands in the default setting (20-period MA, shift by two standard deviations each). Values between zero and one are within the bands. Values below zero indicate prices below the lower band, values above one indicate prices above the upper band. According to Bollinger, besides the location of the closing price the thickness of the bands is also important for the analysis.

Average Directional Movement Index (ADX)
The ADX indicates the strength of a trend. In general, an ADX value above 30 indicates a strong trend and an ADX value below 15 a distinct trading range which may lead to a breakout.

Moving Average Convergence/Divergence (MACD)
The MACD is a commonly used trend-following indicator. It is calculated from the difference between two exponentially smoothed moving averages. The signal line of the indicator results from a smoothing of the MACD itself.

Intraday Intensity Index (III)
This volume-based indicator shows where the big money in a stock goes. This is measured by using the ratio of the closing price to the high-low range of the day.

Formula: $III = \frac{(2 \times Close - High - Low)}{(High - Low) \times Volume}$

slightly so, that is a very bullish sign.

TRADERS´: What does your risk and money management look like?
John Bollinger: I basically follow a portfolio approach. This means that I diversify my positions, spreading the overall risk. Also, I take little risk per trade in terms of the total portfolio. Once I have opened a position, I will not increase it later. So I do not use any pyramiding technique. When I exit, it may be that I proceed in stages if my position is clearly in positive territory. Sometimes I change my positions directly from long to short or vice versa. However, I do all this on a discretionary basis.

TRADERS´: What types of orders do you use?
John Bollinger: I basically use only limit orders for my buy and sell orders. Incidentally, I rarely use stops that are in the market, but trust my discretionary exit decision.

TRADERS´: How has your performance changed in recent years?
John Bollinger: The last few years have been very good, I cannot complain. Overall, my performance has developed quite steadily.

TRADERS´: Do you have a fixed daily trading schedule?
John Bollinger: No, there is no definite plan. I do my trading for the medium term and do not necessarily have to be there at certain times of the day since my average holding period is in the range of several months. Short-term trades I do of course, too – especially often intraday – but here I use very small position sizes since this is not the main aspect of my trading.

TRADERS´: In which phases do drawdowns appear in your strategy?
John Bollinger: I trade primarily on the long side of the market. Therefore, things are always difficult for me in major bear markets.

TRADERS´: What do you think of the psychological aspect of trading?
John Bollinger: Psychology is key in trading. To put it in a nutshell, I would say that trading is nothing but a psychological game with yourself.

TRADERS´: What advice do you have for beginners?
John Bollinger: Here I can pass on the advice that I was given myself once and that has helped me a lot: Carry out your own analyses and retrograde calculations and develop a system that works. Then you just have to stay with it and go through with it day by day.

TRADERS´: Would you like to stop trading at some point?
John Bollinger: I think I can answer this question in just three words: No, no way!