Goldenberg, Hehmeyer & Co.
Jim Goulding
January, 2007

research note

The Average True Range

This note looks at an indicator that will help you choose profit and stop targets.

The Average True Range (ATR) is an exceptional indicator that comes with most charting software packages. In Reuters, it's called *Historical Volatility*. In CQG, it's called *The Average True Range* and the same for Future Source.

Some traders will want to know exactly what the ATR is and how it's constructed. For those traders, I'll point you towards the following explanation from Investopedia.com:

"A measure of volatility introduced by Welles Wilder in his book: New Concepts in Technical Trading Systems.

"The True Range indicator is the greatest of the following:
-current high less the current low.
-the absolute value of the current high less the previous close.
-the absolute value of the current low less the previous close."

If you'd like to know more, do a Google search for *Welles Wilder AND Average True Range*. The mathematics may be very important to some traders but it's not the scope of this note.

What this note will cover is how to use the ATR as a trading tool for profit targets and stop losses.

One of the main problems that traders face, after they enter a trade, is where to get out, either at a profit or a loss. All sorts of mental-tennis take's place that doesn't have to. For instance once a trade is placed, say, in the 5yr cash:

- Trader enters short at 99.11 because it's the top of the range. The markets been stuck trading between 99.09 and 99.11.
- As soon as the trade is placed the trader should know the profit target and stop loss. However, this is rarely the case. Let's change that.
- With no specific out, the trader begins playing what I call mental-tennis. If the market tics to 11+ the trader thinks*, "Oh great, is this the one-time they finally break out of the range? Should I double up? Why are they rallying, now? Is it just an unwind, that's boosting the market? Or maybe a CMBS buyer? Could be swaps related?"* and on and on and on….

The ATR is much better than mental-tennis. I know because I used to be a professional at mental-tennis. However, by using the ATR I know longer play the mental-tennis game.

The following is a chart of the 5yr, with the ATR on it:

 Fri Jan 19 2007

The current ATR on the chart shows 2.05. That represents 2.05 boxes, in CQG. (If you're not using CQG, you must learn how your software converts fixed income prices.)

So, let's use the chart above and the example of the trade I wrote about above to show how I use the ATR to find my profit target and stop loss.

If I sold the 5yr at 99.11, then the ATR states that the average true range on the 5-min chart is 2 boxes. I'll use that figure for my profit target and stop loss with one added extra rule. Here are the rules:

1. Short at 99.11
2. Stop = 99.11 ¾
3. Profit target = 99.10 ½
4. Rules if you're short
    a. Profit target = Subtract the ATR from your entry price
    b. Stop target = Add the ATR to your entry price PLUS 1-box.
    c. I add 1-box to the 5yr and 10yr, futures or cash. (I don't add anything to the 30s and I don't trade the 2s.)

There are no ifs-ands-or-buts. The ATR is the best indicator of volatility and it's a live indicator. If the ATR is 2 boxes, on the 5 min., chart, how can I expect to put a trade on off-of the 5 min., chart, and make 6 boxes? The odds would simply be against me.

The ATR tells me what the market will give me. In the chart above, the ATR is telling me that for my time frame of 5-min, the market is moving an average of 2 boxes every 5-min.

The ATR protects me from shock-and-awe news. If the market rallies to 11 ¾ , I'm going to get out there. If there was some piece of news that came out that I didn't know about and the market continued that direction, I'm protected. If the market breaks, I can get out at 10 ½ or decide to put in a trailing stop. That way I can get in on the news. Most likely, I'm out at 10 ½, though.

The ATR stops the mental-tennis. The parameters have been set and they were set the second I got into the trade. My profit target was ½ a tic and my stop loss was ¾ of a tic, period, end of story.

We use the ATR many different ways. In gold, we trade levels everyday. We've found that we have a very high winning percentage, so, we decided to use the ATR the following way:

- Long 1~gold @ 636.00
- ATR on 5 min chart is 70 cents
- Stop = Entry price - ATR
    - 635.30 = 636.00 - .70
- Profit = entry price + ½ ATR
    - 636.40 = 636.00 + .35 (I'm rounding up to .40)

We have a high win/loss ratio, so we can take a bigger stop loss than winning target.

There's many ways to use the ATR. You have to find out how to use it for your commodity. Feel free to email me questions.

Lastly, I set my ATR to 7 or 10 depending on the time frame. But 7 is usually good. Also, I use the simple average, not smooth or exponential, etc.

Thank you,
Jim Goulding
Goldenberg, Hehmeyer & Co.
Treas-Arb, Chicago.

Disclaimer:

This Research Note is meant for in-house use at Goldenberg, Hehmeyer & Co., only. Do not transmit this research note to anyone outside Goldenberg, Hehmeyer & Co. If you are in receipt of this research note and you are not employed by Goldenberg, Hehmeyer & Co., and you attempt to use anything within this research note, you doing so solely at your own risk.