



Strategy-specific trade management and risk control

Not all trade strategies can use the same kind of stop-loss and exit techniques.

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When designing trading strategies, most traders try to find ideal entry signals, while corresponding exit points remain an afterthought. However, robust strategies contain detailed exit rules that are designed to manage risk effectively. But how do you know where to place stop-loss orders?

The wise-guy answer to this question is, “Close enough to avoid catastrophic losses and far enough away that you are not stopped out of good positions on minor fluctuations.” This assumes that “minor” and “catastrophic” are absolute terms, which of course they aren’t. So the best answer regarding how much risk is too little or too much depends on the following factors: capitalization, average profit/average loss ratio, and percentage of winning trades.

Comparing the performance of two representative systems will illustrate how these factors dictate the type of exit and stop-loss rules that are appropriate for a given strategy.

System 1: Trend-following

Let’s revisit a simple intermediate-term trend-following strategy (Bollinger Band breakout) from “Two systems are better than one” (*Futures & Options Trader*, November 2008). It enters long trades when price closes above the upper Bollinger Band and short trades when price closes below the lower Bollinger Band. The system exits when price reaches the 20-day simple moving average (SMA). The rules are:

1. **Go long** if price closes above the upper Bollinger Band.
2. **Sell short** if price closes below the lower Bollinger Band.
3. **Exit all trades** with a stop-loss order when price reaches the 20-day SMA.

Bollinger Band settings: 20-day moving average; bands two standard deviations above and below.

Table 1 shows the back-test results for crude oil (CL) from Dec. 29, 1998 to Dec. 29, 2008, with \$50 per round-turn

trade deducted for slippage and commissions.

Let’s analyze the results and see how it is not the strategy alone that determines risk management, but the strategy relative to capitalization.

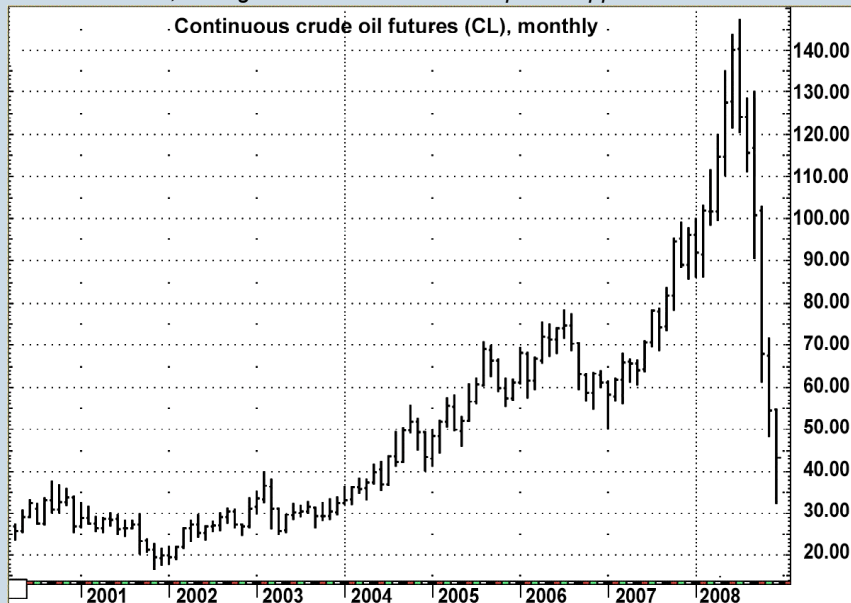
The capitalization factor

For example, if you traded crude oil using this method with a \$1 million account and the worst peak-to-valley drawdown over the 10-year test period was \$21,740.00, then trading one contract represented a very conservative maximum risk of 2.17 percent. However, with a \$100,000 account the same drawdown represents a very aggressive 21.74-percent risk level.

How much risk is right for a given capitalization level? If you were trading only crude oil and using only the Bollinger Band Breakout system, you would probably need \$250,000 for each contract traded. With this capitalization, the \$21,740.00 maximum peak-to-valley drawdown is a manageable 8.70 percent. In this case, you could trade other markets with a low correlation to crude oil without increas-

FIGURE 1 — CRUDE OIL TEST PERIOD: DEC. 1998-DEC. 2008

Two systems — one trend-following and the other countertrend — were tested on 10 years of daily price data. The strategies produced very different trade characteristics, calling for different exit and stop-loss approaches.



Source: CQG Inc.

TABLE 1 — BOLLINGER BAND BREAKOUT

The trend-following system had a low winning percentage but a high average winning trade/average losing trade ratio. The exit technique must focus on allowing winning trades to run.

Total net profit	Average profit	Average loss	Max drawdown	Profit/MaxDD	Winning percentage	Avg. profit/loss ratio
74,020	4,287	-1,567	-21,740	3.4	40.66	2.74

Source: CQG Inc.

TABLE 2 — RSI EXTREMES

The countertrend system had a very high winning percentage but a low average profit/loss ratio. As a result, the system would benefit from a stop-loss that prevents the infrequent losing trades from getting too large.

Total net profit	Average profit	Average loss	Max drawdown	Profit/MaxDD	Winning percentage	Avg. profit/loss ratio
30,110	2,580	-3,583	-17,370	1.73	76.92	0.72

Source: CQG Inc.

ing your account size. (For trading one asset with one trading system, an equity drawdown of 7.5 percent to 12.5 percent is considered an acceptable risk level for a 10-year backtested performance history.)

Alternately, you could also increase trading opportunities without increasing account size by simultaneously using a trading system with a low correlation to the Bollinger Band breakout system.

Average profit/loss and winning percentage

In addition, trend-following methods such the Bollinger Band breakout tend to have larger average profits than average losses. In crude oil, for example, the strategy posted an average profit-to-loss ratio of 2.74 — meaning the average profit was 2.74 times the size of the average loss.

A high average profit-to-loss ratio is a prerequisite for profitability for most trend-following approaches because such systems typically have winning percentages below 50 percent (the Bollinger Band breakout model had only 40.66 percent winners). As a result, in this case it is essential to use the 20-day moving average as a trailing stop-loss, which allows profitable trades to run during trending market environments. The use of a trailing stop in a trend-following system is known as “trading the market, not the money.” The internal dynamics of market strength or weakness determine the exit rather than an arbitrary monetary level.

Now let’s look at these factors in the context of a different kind of system — a countertrend or “mean-reversion” system.

System 2: Mean-reversion

Again, revisiting “Two systems are better than one,” let’s examine the performance of the RSI Extremes system. The trade rules are:

1. **Go long** if the nine-day [relative strength index](#) (RSI) is below 35, price closes above its 200-day SMA, and today’s volume is less than yesterday’s volume.

2. **Exit long** if the RSI closes above 65, or with a \$7,500 stop-loss.
3. **Sell short** if the nine-day RSI is above 65, price closes below the 200-day SMA, and today’s volume is less than yesterday’s volume.
4. **Cover short** if the RSI closes below 35 or with a \$7,500 stop-loss.

Table 2 shows test results for this system in crude oil from Dec. 29, 1998 to Dec. 29, 2008 with \$50 per round-turn trade deducted for slippage and commissions

Notice this system had a much higher winning percentage (76.92) than the Bollinger Band breakout system, but the average profit was significantly smaller than the average loss. Using this strategy, the key to profitability is directly linked to the ability to limit the damage during the low-probability event (less than 25 percent of the time in this case) of a losing trade. As a result, for this system to work we must put a stop-loss in place. If instead we waited for the market’s own internal dynamics (such as a violation of the 200-day moving average) to manage the risk, then a single loss could endanger the overall profitability of the strategy.

This does not mean trend-following systems should use only indicator-driven stop-losses or mean-reversion systems should use only monetary stop-losses. The point is, the type of stop-loss must be appropriate for the type of market action you are trying to capture. Because trend-following methods typically produce more losing trades than winners and, in general, mean-reversion systems experience larger losses than profits, you need to take these realities into account when developing exit strategies for each approach. For example, if you are going to use a monetary profit target for an intermediate-term trend-following system’s exit, you’d better make certain it either allows the average profit-to-loss ratio to be significantly greater than 1.00, or that the system has a winning percentage significantly higher than 50 percent. 📌

For information on the author [see p. 5](#).