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The author may hold positions in the instruments discussed or may apply a similar approach in practice. The information contained in the reports may change without prior notice.

Methodology

TradingEdge.Pro's methodology describes a multi-step process for building and validating trading strategies, structured into two parts: strategy development and testing, and practical use. In the testing phase, a strategy is defined as a set of objective rules, validated through initial tests, optimised, and assessed for stability (robustness), and then evaluated using Walk-Forward Analysis. The detailed testing assumptions (including the instrument universe, in-sample/out-of-sample periods, data sources, transaction costs, and execution rules) are described in the "Testing Specification" document. The full methodology and metric definitions are available on the TradingEdge.Pro "Methodology" page.

Reversal New Highs v.1

Investment Strategy Testing Summary

The Reversal New Highs v.1 strategy is a **swing trading investment technique** developed by **Jeff Cooper.** Its premise (for a long position) is **to utilize a two-candlestick pattern that, after a day of declines, deepens the declines the following day, ending the day at new local highs.** Therefore, we are dealing with formation **outside day.** This "capitulation and reversal candle" clears the market of short-term buyers and fearful sellers, creating a heightened probability of a sharp continuation of the trend the very next day.

Although the strategy's logic seems sound, <u>it has not even passed the initial test </u>because, on the one hand, its results do not indicate a market advantage, and on the other, the number of test transactions is very low, which makes it impossible to draw reliable conclusions. Therefore, <u>it is not recommended to use it in real transactions.</u>

Our goal is to have a strategy that remains **profitable and effective across a wide range of parameters,** because the market is a volatile organism, and optimal parameters can change over time. <u>I can't</u> emphasize enough that for **a strategy to work** in real-world conditions, it must also perform under **suboptimal** <u>parameters </u>and <u>conditions.</u> In short, **it must be stable** to changing market conditions.

I don't know who said these words, but they perfectly capture the problem of many optimizations:

"I've never seen a strategy that didn't work in backtests."

We don't know the future, we don't know future market conditions, but if we know that our strategy **has historically generated acceptable results** in various market conditions and across various parameter ranges, then we are **one step ahead of other** market participants.

Contents

Step 1: Formulate an investment strategy

Reversal New Highs v.1 strategy is a **swing trading** technique developed by **Jeff Cooper** and first described in the book "Hit & Run Trading II: Capturing Explosive Short-Term Moves in Stocks". Its idea is **to join the trend after the market has cleared of short-term buyers and fearful sellers,** using an **outside day pattern** that at the same time it is **the largest candle in several days.**

The strategy's goal is to capture the moment when, **after a day of decline, prices plunge further the following day, ending the day at new local highs.** This "capitulation and return candle" clears the market of short-term players, creating a higher probability of a sharp continuation of the trend the following day. We seek a similar pattern for a downtrend.

The strategy uses:

- **Outside-day high** – today's range covers yesterday's candle in its entirety;
- **Widest 5-session range** – the outside-day candle must have the largest spread (high-low) of the last few days;
- **New high** – the high of the outside-day candle must create a new local high providing a strong momentum context;
- **Simple trigger T+1** – buy stop order 1 tick above the high of the outside-day candle;
- **Fixed initial risk** – stop loss set 1 tick below the low of the outside-day candle enables even capital management.

The strategy encompasses **both long (buy) and short (sell) positions,** and the above elements describing the situation for long positions are analogous to those for short positions. The key element is the precise placement of trigger orders and **strict risk management through stop loss orders.**

Characteristics of the strategy and its strengths and weaknesses:

- **High reward/risk ratio** – entry after a shakeout allows for a tight stop and frequent movements ≥ 2R (according to the author's calculations);
- **Signal rarity** – simultaneous fulfillment of three conditions (outside-day + range max + XX-day high) occurs sporadically, which favors selectivity;
- **Strong momentum context** – new highs filter instruments with real strength;
- **Potential slippage** – a wide spread of the daily candle can be combined with higher volatility at the opening of the next session;
- **No trailing stop loss** – the original version is based on a fixed stop loss order and closing the position after a specified number of days.

Reversal New Highs v.1 strategy, although rare, is a valuable addition to the "trend continuation" portfolio, allowing you to enter after a temporary market shakeout, when many players have already capitulated from their positions.

Step 2: Determine investment principles

Below is **the pseudocode** for the **Reversal New Highs v.1 strategy** on daily data:

1. **Signal candle identification**
   a. **Outside day –** today the low of the instrument is below yesterday's low, and today's the high of the instrument is above yesterday's maximum.
   b. **Widest XX-session spread** – daily high-low must be the largest compared to the last XX sessions.
   c. **New YY-day high/low –** the high/low of the outside day candle must form a new YY-day high (for a long position) or low (for a short position).
2. **Generating entry signals – long position (buy)**
   a. **Entering the trade** – in the next session, set a buy stop order 1 tick above the high of the outside day candle to be activated only if the momentum continues.
   b. **Risk management –** set stop loss 1 tick below the minimum (low) of the outside day candle.
3. **Generating entry signals – short position (sell)**
   a. **Entering the trade** – in the next session, set a sell stop order 1 tick below the low of the outside day candle to be activated only if the momentum continues.
   b. **Risk management –** set stop loss 1 tick above the high of the outside day candle.
4. **Closing the position** – if a stop loss has not been previously activated, close the trade at the opening breakeven point of the session after entry, which limits exposure to unfavorable movements after the initial impulse.
5. **Daily monitoring**
   a. After each session, check whether the conditions described in "Identifying a Signal Candle" are met.
   b. Once all conditions for a long or short position are met, set appropriate orders (buy stop or sell stop) for the next trading day.

The above rules are described in a way that allows them to be directly converted into a script in the chosen testing platform, which ensures the accuracy of the historical simulation and the reliability of the test results.

Testing is performed assuming that **the risk of one position is 1.0% of total capital.**

Step 3: Pre-test your investment strategy

Below are some purchase and sale transactions that allow you to verify the following aspects:

- **Correctness of generated signals;**
- **Direction of opening a position;**
- **Moment of opening the position;**
- **The opening price of the position;**
- **Moment of closing the position;**
- **Closing price of the position;**
- **Compliance of the transaction with the theoretical assumptions of the investment strategy.**

At this stage, **it doesn't matter** whether the trades are **profitable,** what **instrument was used,** or whether they occurred **recently** or **in the distant past.** The key is **to verify that the trades are generated correctly** and in line with the assumptions described in the previous step.

Our first transaction is on the Brent Crude oil futures contract. In early June 2021, prices **were in an uptrend, forming a small bearish candle** (the first candle in the left-hand rectangle). The following day, a large, bullish candle formed, **with the largest range in 5 days and a high that created a new, local (100-day) high** (the second candle in the left-hand rectangle). Both candles together also form **an outside-day formation.** Therefore, **all the elements necessary to initiate a long position were met,** so the next day we placed **a buy stop order one tick above the high of the last candle.** This order was activated the following day (the third candle in the left-hand rectangle), and **a defensive order** (red dot) was set one tick below the low of the last candle. **The system worked correctly.**

The strategy assumes **closing the position after five days or when a defensive order is triggered.** Since the stop loss order wasn't reached within five days, we close the position on the sixth day at the opening (the candle in the right-hand rectangle). **The system worked correctly.**
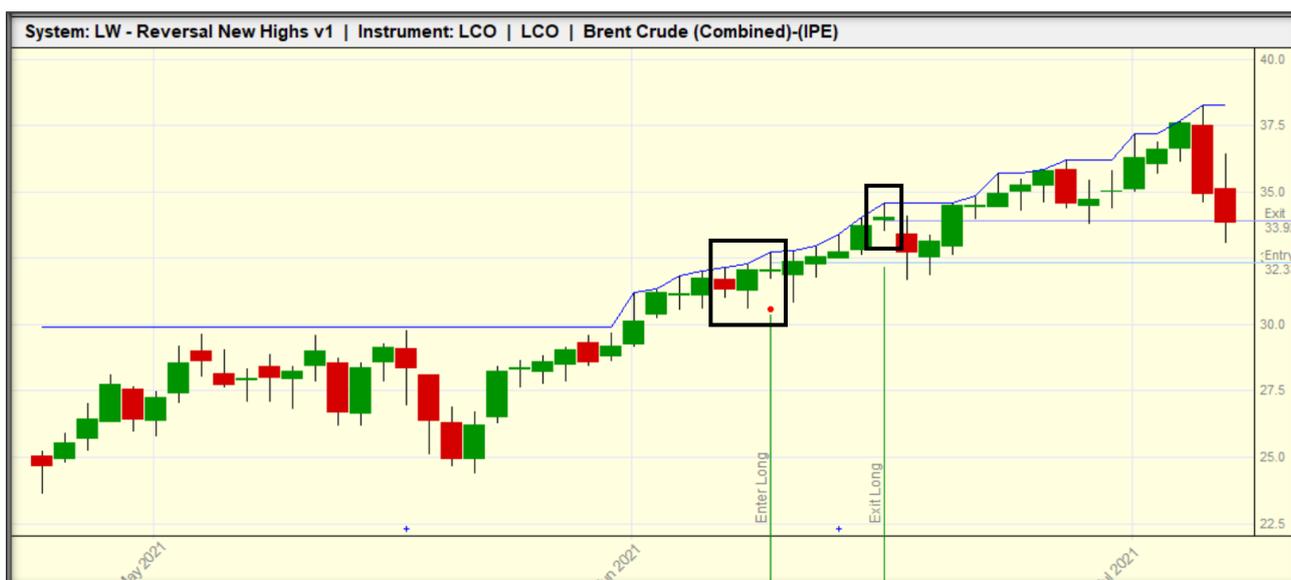
The second transaction is on a US dollar index futures contract. In early May 2017, prices **were in a downtrend, forming a bullish candle** (the first candle in the left-hand rectangle). The following day, a large, bearish candle formed, **with the largest range in 5 days and a bottom that created a new, local (100-day) low** (the second candle in the left-hand rectangle). Both candles together also form **an outside-day formation.** Therefore, **all the elements necessary to initiate a short position were met,** so the next day we placed **a sell stop order one tick below the low of the last candle.** This order was activated the following day (the third candle in the left-hand rectangle), and **a defensive order** (red dot) was set one tick above the high of the last candle. **The system worked correctly.**

The strategy assumes **closing the position after 5 days or when a defensive stop loss order is triggered.** Since prices began to rise rapidly after opening the short position, a defensive stop loss order was triggered on the third day of holding the position. **The system worked correctly.**

Once we are sure that the trades are generated correctly, **we can move on to the first test of the strategy on the full in-sample dataset**. These tests are conducted on **baseline parameters** that, in my opinion, should align with the strategy's stated goals.

First, **we reject strategies that linearly lose capital.** If a strategy exhibits this pattern, it's a clear signal that any parameter optimization is pointless.

Our basic expectation is that the strategy generates **positive results,** even if they are at a low level.

The tested output parameters are:

- **Widest spread:** today's high-low must be the largest compared to the last 5 sessions; this candle also forms an outside day formation;
- **New local high/low:** the high/low of the outside day candle must create a new 100-day high (for a long position) or low (for a short position);
- **Position opening method:** buy/sell stop one tick above/below the high/low of the last candle;
- **Stop loss:** one tick below/above the low/high of the last candle (for long/short position respectively);

- **Closing the position:** 5 days after opening (6 days for opening);
- **Position direction:** long and short;
- **Position sizes:** corresponding to a risk of 1.0% of total capital.

The test result is shown below.

Historical or simulated results do not guarantee that similar outcomes will be achieved in the future.

Performance Curve - Log Scale with Drawdowns
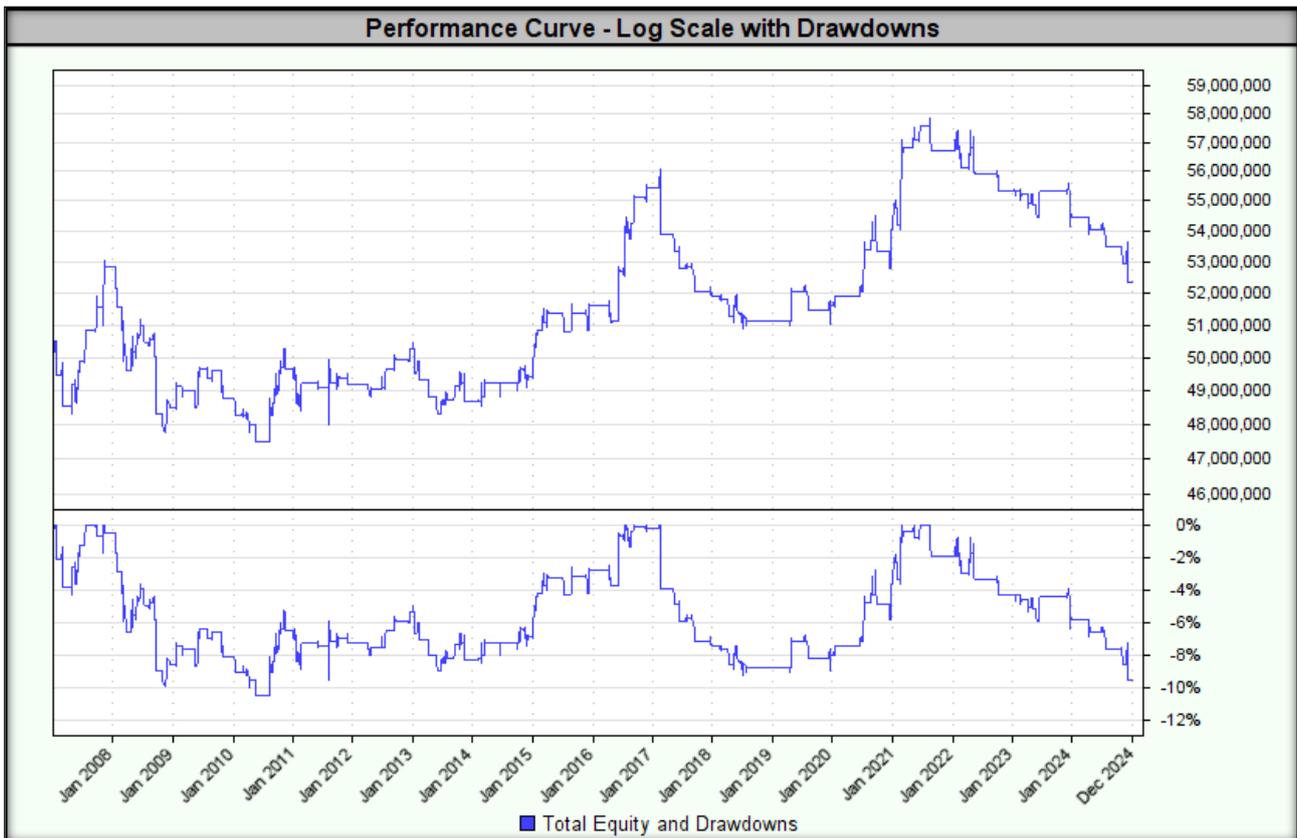
Historical or simulated results do not guarantee that similar outcomes will be achieved in the future.

Indicators/Measures	Concluding a transaction at the opening price
CAGR%	0.25%
MAR Ratio	0.02
RAR%	0.77%
R-Cubed	0.03
Robust Sharpe Ratio	0.22
Max Drawdown	10.5%
Wins	51.4%
Losses	48.6%
Average Win%	0.77%
Average Loss%	0.76%
Win/Loss Ratio	1.01
Average Trade Duration (days)	6
Percent Profit Factor	1.07

SQN	0.09
Number of transactions	212

In summary, the system worked well and generated signals as expected. **However, the strategy has poor results (drawdown in the last four years),** and **the number of test transactions is very low,** making it impossible to draw reliable conclusions. **This means that the reliability of this strategy leaves much to be desired, and at this stage we are ending testing and abandoning further development of the strategy.**

Step 4: Optimizing and assessing the stability of the investment strategy

1. **Stability across a wide range of optimized parameters**

The step was skipped due to **failure of the preliminary tests.**

2. **Monte Carlo simulation**

The step was skipped due to **failure of the preliminary tests.**

3. **Stability over a moving time window**

The step was skipped due to **failure of the preliminary tests.**

4. **Long/short stability**

The step was skipped due to **failure of the preliminary tests.**

5. **Stability in the portfolio of financial instruments**

The step was skipped due to **failure of the preliminary tests.**

6. **Money Management (Position Sizing)**

The step was skipped due to **failure of the preliminary tests.**

7. **Strategy Risk Management**

The step was skipped due to **failure of the preliminary tests.**

Step 5: Walk-Forward Analysis

The step was skipped due to **failure of the preliminary tests.**

Step 6: Using the strategy in real time

The step was skipped due to **failure of the preliminary tests.**