

VERIFYING THE EFFICACY OF TRADING SOFTWARE

Background:

CDZ Capital is a financial firm that makes a substantial portion of its revenue from day-trading index futures. Trading software was purchased that had a black-box algorithm that produced support and resistance levels for traders to buy and sell futures, respectively. An example of those levels are displayed below:



The Challenge:

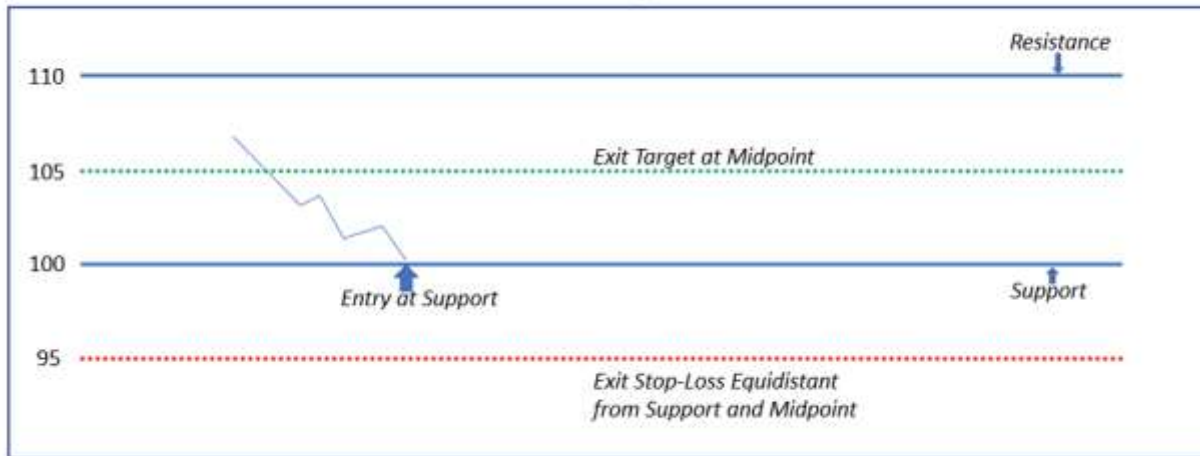
Due to the highly variable results from trading based on the software's recommendations, it became difficult to determine the optimal approach to using the support and resistance levels.

CDZ Capital sought StrataQuant to develop a systematic method to best take advantage of the software's recommendations.

Methodology:

To accomplish this, a collection of separate strategies were developed and simulated on actual market movements. An example of two separate strategies are below:

Strategy A



Strategy B



In Strategy A, since the target and the stop-loss is equidistant from the entry, we would expect this trade to be successful 50% of the time if the levels were random. Strategy B has an expected win rate of 33%, as the stop-loss is twice as close to the entry as the target.

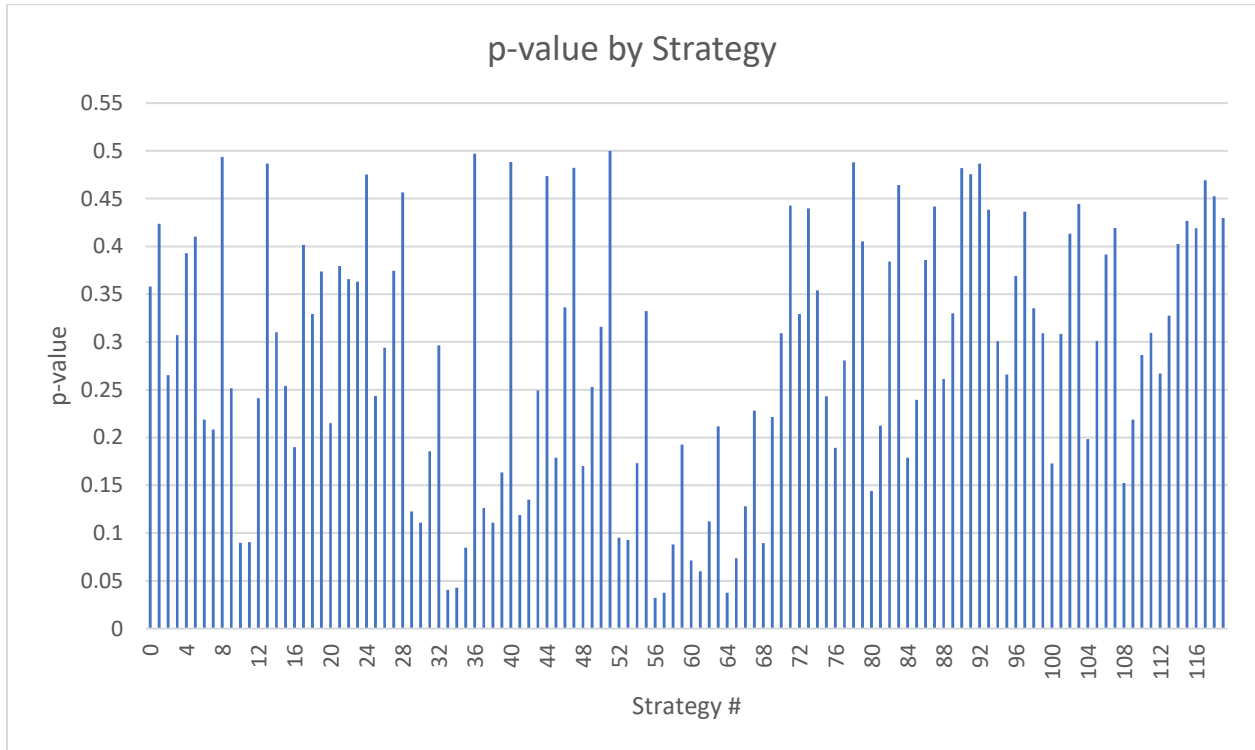
From these expected rates, we conducted a chi-squared analysis and calculated p-value to each strategy. This quantified the likelihood that there was predictive value in the support and resistance levels by strategy.

This analysis was repeated on 120 separate entry, exit, and stop-loss points, and the p-values calculated. The acceptable p-value threshold was set at .05, consistent with academia. However, due to the large

number of strategies, roughly 5% of the total strategies was expected to reach this level due to chance, thus a minimum of 15% of the strategies (18) were required to be below a p-value of .05 to demonstrate the efficacy of the software.

Results:

Of the 120 strategies, only 5 met the p-value \leq .05 threshold:



The conclusion was then reached that the trading software was not effective, as it was far more likely that profit was generated due to random chance than by actual edge being captured.

While this analysis doesn't generate more profit, it saved CDZ Capital time and money from experimenting with different strategies using the software as guidance.

Contact us to verify which of your strategies are worth leaving behind, and which you can be confident aggressively deploying to power your profit.