CLIENT	Demonstration report	**DATE**	17 Nov 2026
STRATEGY	Golden Cross, SMA 50/200, long	**PACKAGE**	Full Diagnostic
UNIVERSE	Binance USD-M crypto perpetuals (477)	**TIMEFRAME**	1d

EDGE SCORE

1 / 5

CONCLUSION

No evidence of edge. The signal loses money even before costs, and realistic fees, slippage and funding deepen the loss. The result does not improve out-of-sample or with other parameters. Net result per trade: **-1269.2 bps** over 1,287 trades.

Edge Score scale: 1 No evidence of edge · 2 Weak / unstable · 3 Inconclusive · 4 Probable edge · 5 Robust, consistent edge

Request

Evaluate whether the Golden Cross, one of the most widely followed signals in trading, has a statistical edge on daily candles across Binance crypto futures. Rules: enter long at the next daily open after the 50-day simple moving average closes above the 200-day average; exit at the next daily open after it closes below (the Death Cross).

Technique

Engine	Backtest Doctor custom engine (Python). Signals on candle close, execution at the next candle open.
Data	Binance USD-M USDT perpetuals, 1d candles, Jan 2021 to Oct 2026. 477 crypto symbols, including delisted ones (no survivorship bias). 285 delisted contracts listed in 2026 excluded because their type could not be verified.
Costs	Taker fee 0.04% and slippage 0.02% per side; actual historical funding rates while in position.
Split	In-sample 2021-01 to before 2024-07; out-of-sample 2024-07 to 2026-10.
Tests	Cost decomposition, IS/OOS, parameter map (18 sets), per-symbol breakdown, quarterly walk-forward, Monte Carlo (5,000), deflated Sharpe ratio.

Code review

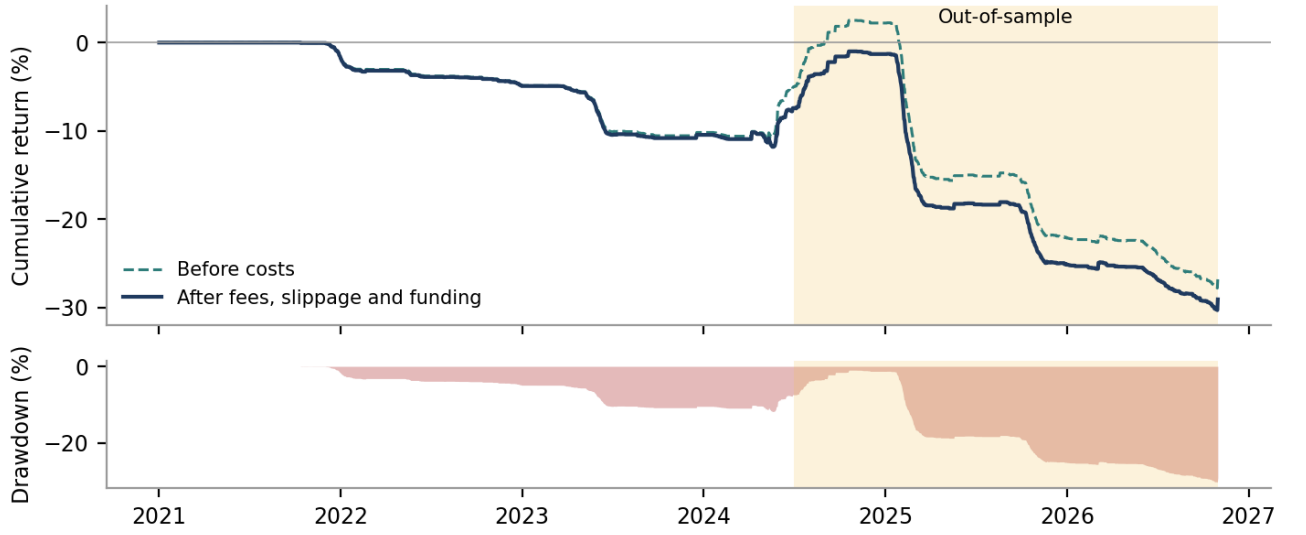
Rules use confirmed candle closes only, with execution at the next open: no lookahead or repainting. Data gaps longer than 12 days end any open position, so no trade spans missing data.

Findings

Test	Trades	Win rate	Gross/trade	Net/trade	t-stat
Full period	1,287	18%	-1144.5 bps	-1269.2 bps	-8.0
In-sample	374	21%	-648.2 bps	-978.9 bps	-3.9
Out-of-sample	913	16%	-1347.8 bps	-1388.1 bps	-7.0

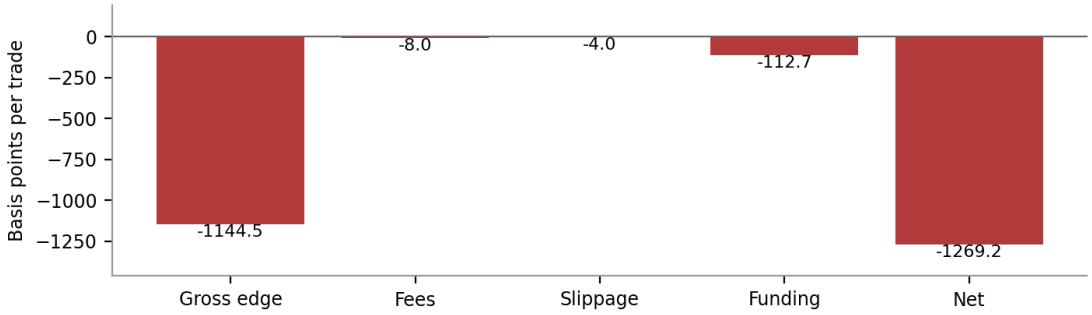
Portfolio (equal capital per symbol)	Before costs	After costs	Out-of-sample	Max drawdown
Total return	-26.7%	-29.1%	-23.4%	-30.3%

Figure 1. Portfolio return and drawdown, equal capital per symbol, Golden Cross SMA 50/20



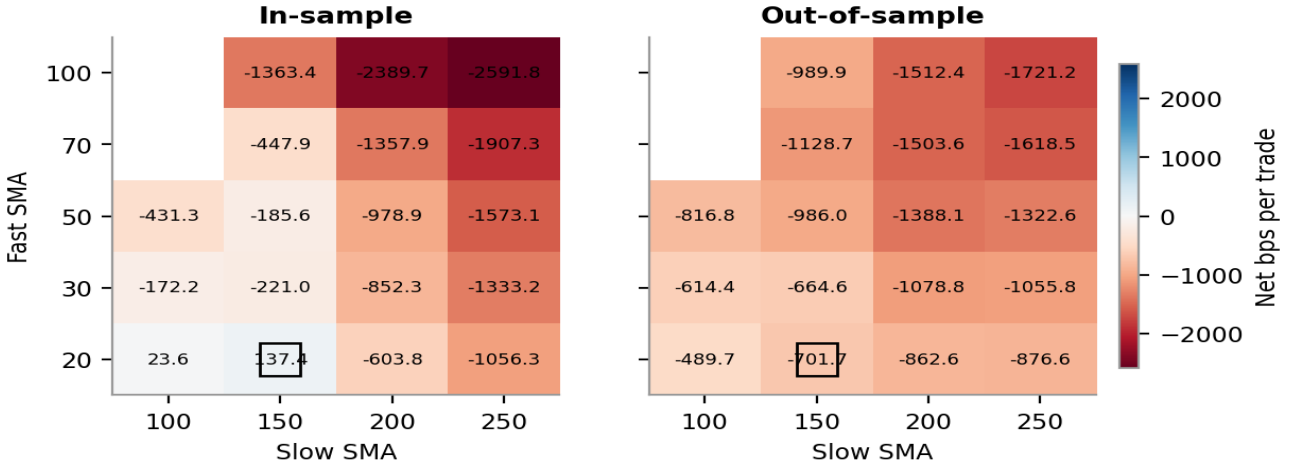
1. Costs. The signal itself loses money: the average trade is negative even before costs. The average trade returns -1144.5 bps before costs. Fees and slippage take 12 bps per round trip and funding costs 112.7 bps, leaving -1269.2 bps. Average holding time: 83 days.

Figure 2. Where the average trade's return goes



2. Parameter robustness. The best in-sample set is SMA 20/150 (+137.4 bps per trade, t = 0.6). Out-of-sample it returns -701.7 bps (t = -5.0). 0% of all 18 sets are profitable out-of-sample.

Figure 3. Parameter map (18 sets). Square = best in-sample (20/150)



3. Data snooping. After adjusting for 18 tested sets, the deflated Sharpe ratio of the best in-sample set is 0.00 (threshold 0.95).

4. Consistency across symbols. 13% of symbols with at least 3 trades have a positive mean net result.

5. Walk-forward. Re-selecting parameters each quarter on the previous 12 months gives a cumulative return of -6.7% (equal capital per symbol, compounded). Selected sets: 2022 Q1: 70/250, 2022 Q2: 70/150, 2022 Q3: 70/150, 2022 Q4: 70/150, 2023 Q1: 70/150, 2023 Q2: 100/200, 2023 Q3: 50/100, 2023 Q4: 50/100, 2024 Q1: 20/100, 2024 Q2: 20/100, 2024 Q3: 20/150, 2024 Q4: 50/150, 2025 Q1: 70/150, 2025 Q2: 20/100, 2025 Q3: 50/100, 2025 Q4: 20/100, 2026 Q1: 20/100, 2026 Q2: 50/100, 2026 Q3: 20/100, 2026 Q4: 20/100.

6. Monte Carlo. Block-bootstrapping the out-of-sample daily results 5,000 times gives a loss in **100.0%** of runs (median -23.3%; 5th to 95th percentile -32.5% to -13.9%).

Figure 4. Result by symbol

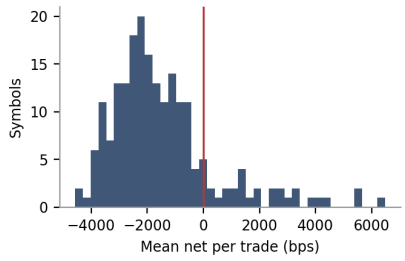


Figure 5. Walk-forward, quarterly

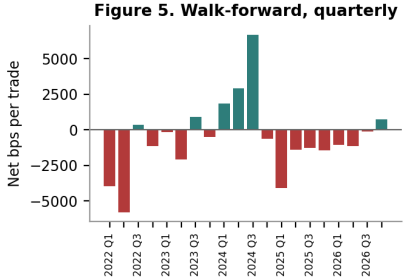
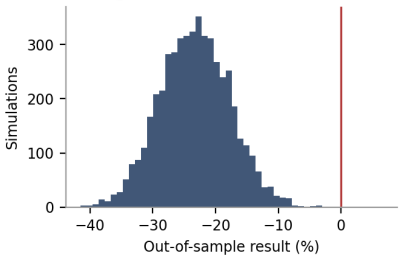


Figure 6. Monte Carlo (5,000)



Summary of bias screening

Bias	Status	Comment
Lookahead / repainting	Not present	Close-only signals, next-open execution
Survivorship bias	Not present	Delisted symbols included
Cost bias	Not present	Fees, slippage and actual funding modelled
Overfitting	Present	Best IS set: -701.7 bps out-of-sample
Data snooping	Present	Deflated Sharpe 0.00 after 18 trials
Insufficient sample	Not present	1,287 trades

Monthly returns (%), portfolio after costs

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2021										-0.0	-0.0	-1.5	**-1.6**
2022	-1.6	-0.0			-0.5	-0.2	-0.0	-0.0	-0.1	-0.1	-0.3	-0.6	**-3.4**
2023	-0.0		-0.2	-0.5	-2.2	-3.0	0.1	-0.2	-0.2	0.0		0.4	**-5.8**
2024	-0.2	-0.4	-0.0	0.5	1.6	1.8	3.9	0.7	1.7	0.6	-0.2	-0.1	**10.2**
2025	-3.2	-11.9	-3.1	-0.3	0.5	-0.1	-0.0	0.4	-1.1	-5.2	-2.2	-0.3	**-24.2**
2026	-0.2	-0.4	0.5	-0.2	-0.1	-1.7	-1.6	-0.7	-1.2	0.2			**-5.2**

Conclusion

No evidence of edge. The signal loses money even before costs, and realistic fees, slippage and funding deepen the loss. The result does not improve out-of-sample or with other parameters. **Edge Score: 1 / 5.**

Recommendations

- Do not trade this strategy live in its current form.
- The entry signal has negative expectancy before costs; on 1d candles, round-trip costs then add a further loss of about 12 bps per trade.
- Variants with additional filters (trend, volatility or market regime) can be assessed in a follow-up diagnostic under the same protocol.

Reported by: Backtest Doctor

Disclaimer. This report is a historical statistical analysis of a publicly known strategy. It is not investment advice or a recommendation to buy or sell any asset. Trading leveraged products involves substantial risk of loss.

Demonstration report. The strategy was selected by Backtest Doctor to illustrate the diagnostic protocol. All figures come from actual Binance historical data.