

Backtest Performance Report

Bars processed: 18697
Trades executed: 587
Starting capital: 10,000.00
Total capital (final equity): 73,063.73
Max capital: 74,027.73
Min capital: 9,866.48
Total fees paid: 1,889.40
Total interest/funding paid: 0.00
Total profit before fees: 64,953.12
Duplicate timestamps: 0
Missing bars: 16
Outlier bars: 70
Total volume traded: 18,893,973.94
Max effective leverage used: 2.95x

Key stats:

Periods Per Year: 2192.0000
Total Return: 630.64%
Cagr: 26.26%
Volatility: 19.78%
Sharpe: 1.2771
Sortino: 1.2554
Max Drawdown: -19.91%
Calmar: 1.3189
Total Trades: 587
Win Rate: 31.35%
Profit Factor: 1.5488
Avg Trade Pnl: 107.4339
Avg Win: 967.2504
Avg Loss: -285.1373
Expectancy: 107.4339
Avg Holding Bars: 15.1295
Exposure: 47.50%

Position/trade stats:

Mean position size (USD): 16,081.90
Median position size (USD): 10,062.34
Mean trade PnL (USD/%): 107.43 / 0.39%
Median trade PnL (USD/%): -107.33 / -0.44%
Total slippage paid (est): 188.94
Fees per trade: 3.22
Slippage per trade (est): 0.32

Entry/Exit Outcomes

Entry	Exit	Trades	Net PnL
Bearish 1W	Signal Intent Flip to Bullish 1W	10	+6,218
Bearish 1W	Strategy Exit Reason: 1W-D Opposite Close	1	+1,142
Bearish 1W	Strategy Exit Reason: Red Gator Teeth PP	3	+2,858
Bearish 1W	Strategy Exit Reason: Underlying Gain Target	2	+1,528
Bearish 1W	Strategy Exit Reason: Williams Zones PP	3	+2,336
Bearish 1W	Strategy Reversal to Bullish 1W	1	+1,169
Bearish 1W	Strategy Stop Loss Bearish 1W	157	-24,309
Bearish 1W + Bearish Add-on Fractal	Signal Intent Flip to Bullish 1W	9	+9,301
Bearish 1W + Bearish Add-on Fractal	Strategy Exit Reason: Red Gator Teeth PP	3	+1,859
Bearish 1W + Bearish Add-on Fractal	Strategy Exit Reason: Underlying Gain Target	2	+4,452
Bearish 1W + Bearish Add-on Fractal	Strategy Exit Reason: Williams Zones PP	8	+7,511
Bearish 1W + Bearish Add-on Fractal	Strategy Reversal to Bullish 1W	1	+311
Bearish 1W + Bearish Add-on Fractal	Strategy Stop Loss Bearish 1W	6	-7,769
Bearish 1W-R	Strategy Exit Reason: 1W-R Flattened by Opposite 1W	2	+4,407
Bearish 1W-R	Strategy Exit Reason: Underlying Gain Target	2	+933
Bearish 1W-R	Strategy Reversal to Bullish 1W	1	-48
Bearish 1W-R	Strategy Stop Loss Bearish 1W-R	18	-7,286
Bearish 1W-R + Bearish Add-on Fractal	Strategy Exit Reason: 1W-R Flattened by Opposite 1W	2	+6,730
Bearish 1W-R + Bearish Add-on Fractal	Strategy Exit Reason: Underlying Gain Target	4	+14,716
Bearish 1W-R + Bearish Add-on Fractal	Strategy Exit Reason: Williams Zones PP	2	+3,399
Bearish 1W-R + Bearish Add-on Fractal	Strategy Reversal to Bullish 1W	1	+518
Bearish 1W-R + Bearish Add-on Fractal	Strategy Stop Loss Bearish 1W	6	-5,260
Bullish 1W	Engine End of Backtest	1	+510
Bullish 1W	Signal Intent Flip to Bearish 1W	13	+8,040
Bullish 1W	Strategy Exit Reason: 1W-A Opposite Close	1	+97
Bullish 1W	Strategy Exit Reason: Red Gator Teeth PP	2	+1,207
Bullish 1W	Strategy Exit Reason: Underlying Gain Target	2	+1,494
Bullish 1W	Strategy Exit Reason: Williams Zones PP	4	+2,060
Bullish 1W	Strategy Stop Loss Bullish 1W	136	-27,221
Bullish 1W + Bullish Add-on Fractal	Signal Intent Flip to Bearish 1W	11	+9,114
Bullish 1W + Bullish Add-on Fractal	Strategy Exit Reason: Red Gator Teeth PP	7	+2,842
Bullish 1W + Bullish Add-on Fractal	Strategy Exit Reason: Williams Zones PP	12	+23,712
Bullish 1W + Bullish Add-on Fractal	Strategy Reversal to Bearish 1W	1	+573
Bullish 1W + Bullish Add-on Fractal	Strategy Stop Loss Bullish 1W	2	-782
Bullish 1W-R	Strategy Exit Reason: 1W-R Flattened by Opposite 1W	2	+6,973
Bullish 1W-R	Strategy Exit Reason: Red Gator Teeth PP	2	+7,810

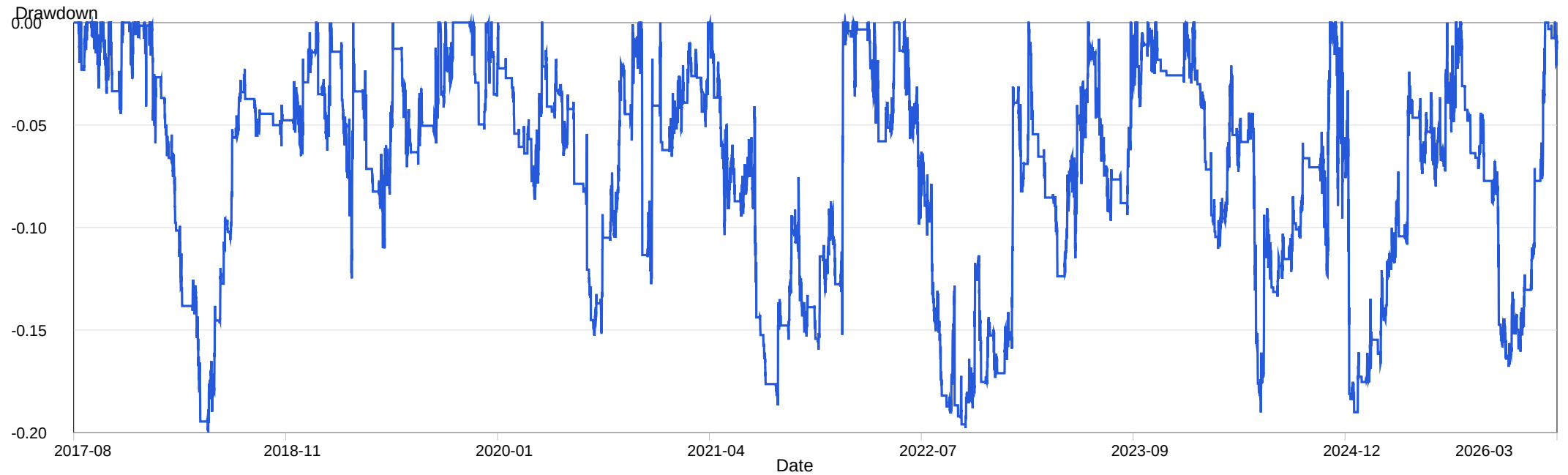
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Equity Over Time

Trade lines: long=green, short=red



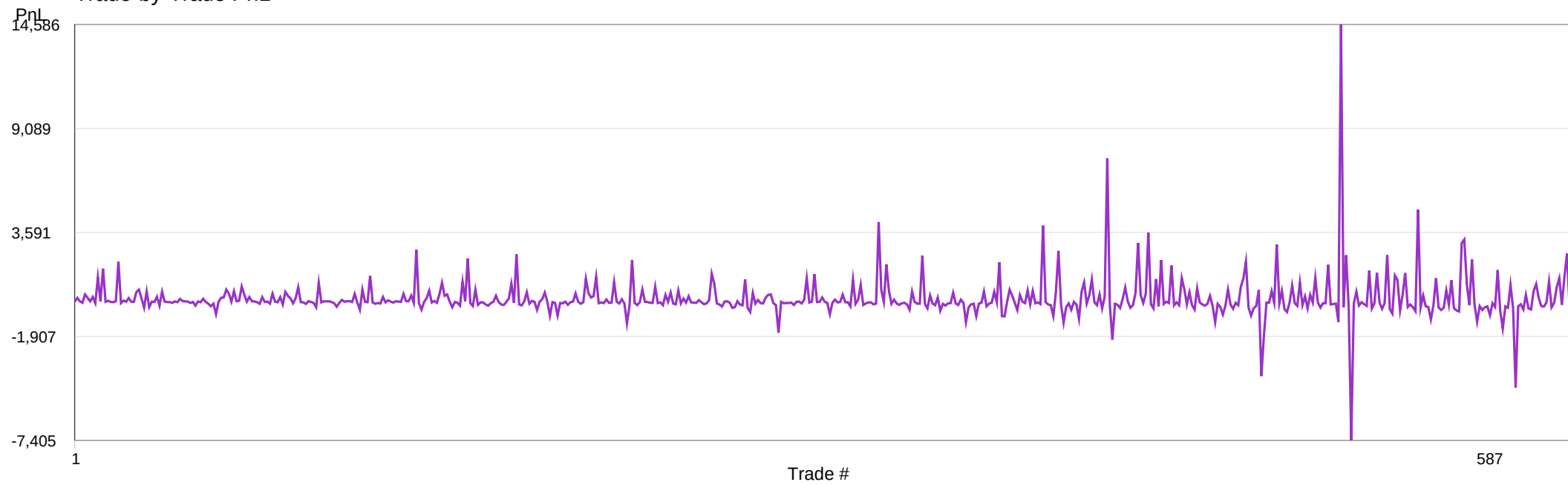
Drawdown Over Time



Cumulative Closed-Trade PnL

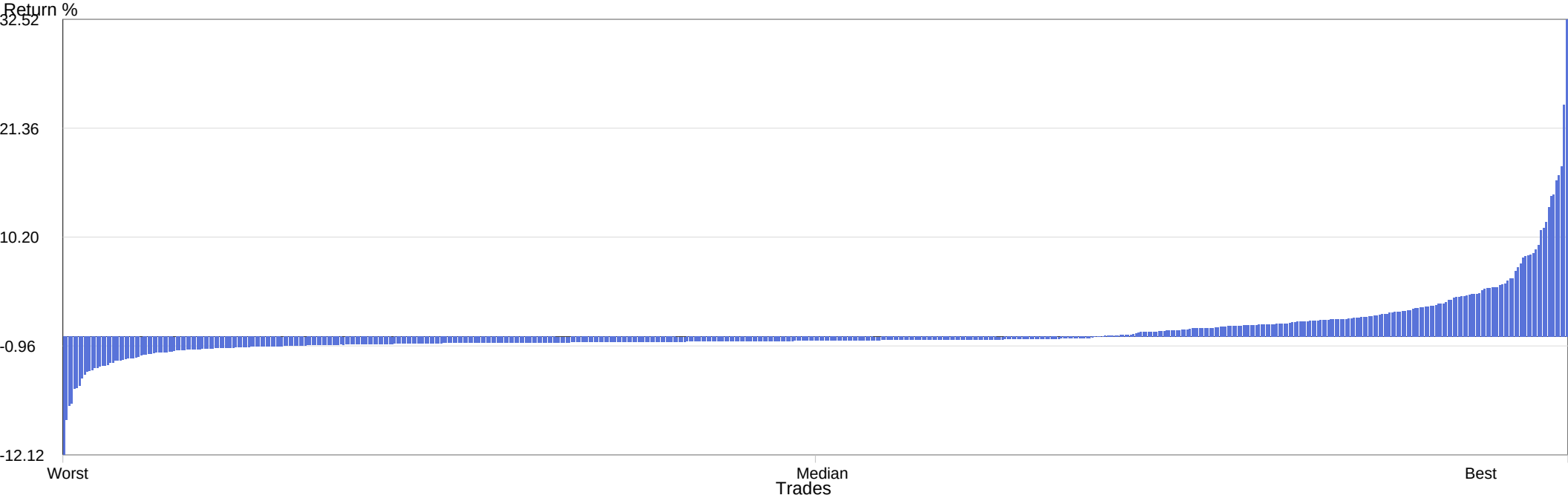


Trade-by-Trade PnL



Trade Return Distribution

Sorted Trade Return % (Worst to Best)



Trades analyzed: 587
Largest winner (PnL): 14,586.31
Largest loser (PnL): -7,404.89

Gross positive PnL contribution: 177,974.07
Gross negative PnL contribution: -114,910.34
Net closed-trade PnL: 63,063.73

Top profit contributors (PnL / return %):

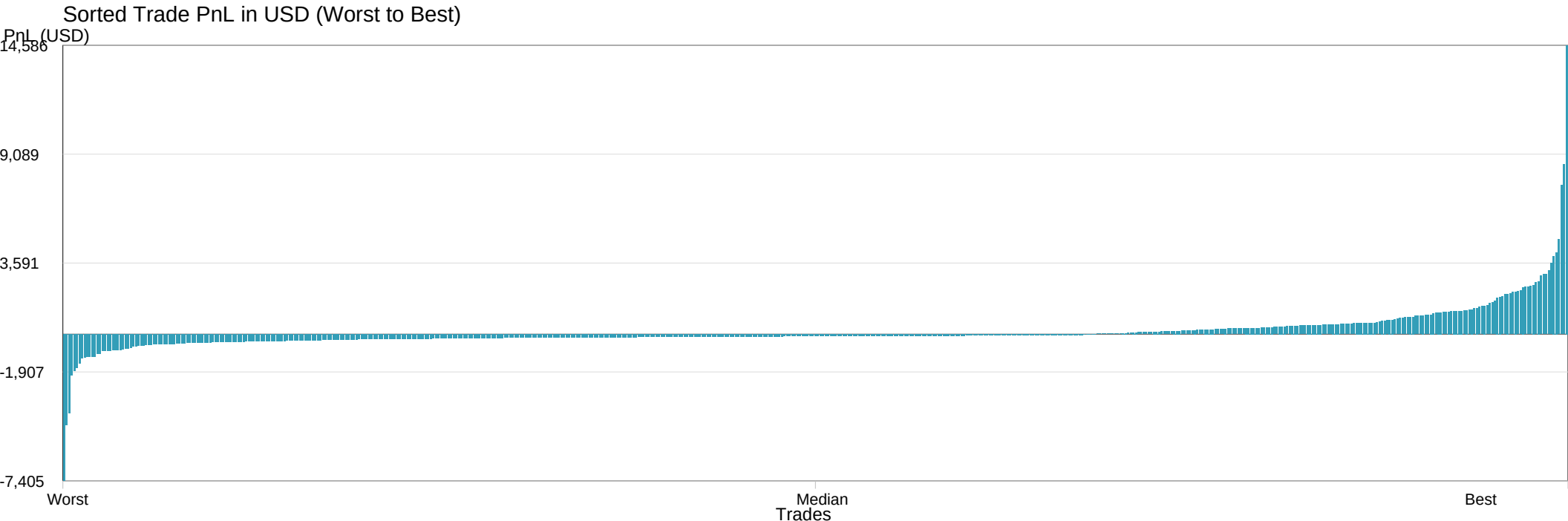
1. 14,586.31 / 32.52%
2. 8,572.53 / 13.28%
3. 7,514.91 / 23.76%
4. 4,787.43 / 8.23%
5. 4,139.46 / 17.45%

Top loss contributors (PnL / return %):

1. -7,404.89 / -12.12%
2. -4,606.46 / -7.13%
3. -4,003.09 / -8.52%
4. -2,078.55 / -5.34%
5. -1,847.63 / -4.30%

Bars are sorted by return %. Negative bars are below zero; positive bars are above zero.

Trade Return Distribution (USD)



Trades analyzed: 587

Largest winner (USD): 14,586.31

Largest loser (USD): -7,404.89

Gross positive PnL: 177,974.07

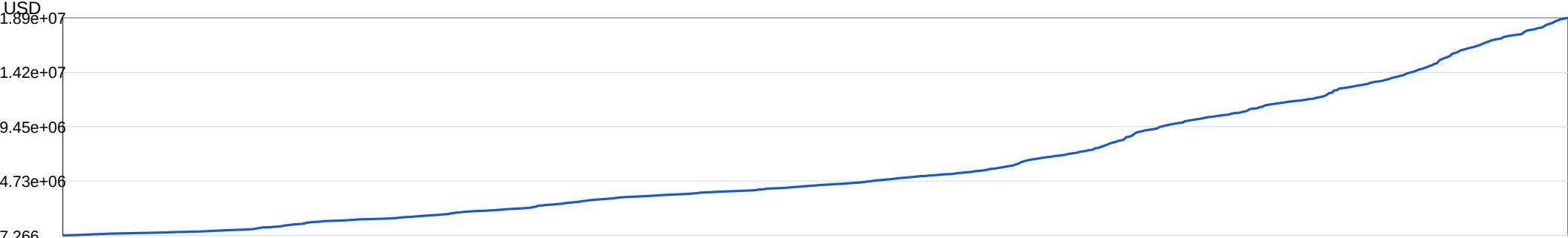
Gross negative PnL: -114,910.34

Net closed-trade PnL: 63,063.73

Bars are sorted by trade PnL in USD. Negative bars are below zero; positive bars are above zero.

Volume / Fees / Slippage Turnover

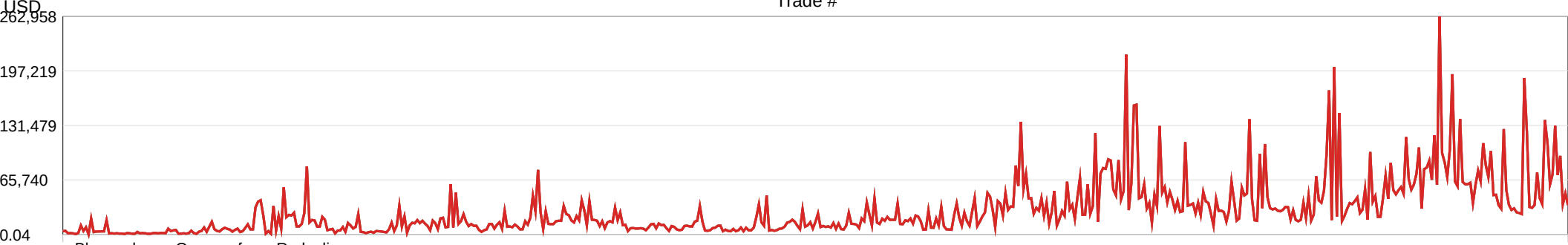
Total cumulative volume (USD): 18,893,973.94
Total cumulative fees (USD): 1,889.40
Total cumulative slippage (USD est): 188.94
Mean volume per trade (USD): 32,187.35
Median volume per trade (USD): 20,274.82
Mean fee per trade (USD): 3.22
Median fee per trade (USD): 2.03
Mean slippage per trade (USD est): 0.32
Median slippage per trade (USD est): 0.20
Cumulative Volume by Trade



Cumulative Fees & Slippage by Trade



Per-Trade Volume / Fees / Slippage



1 Blue=volume, Orange=fees, Red=slippage

Trade #

587

Performance Diagnostics & Recommendations

Reconciliation:

Closed-trade PnL (net of all allocated fees/funding): 63,063.73

Net profit (final - starting equity): 63,063.73

Total fees paid: 1,889.40

Total interest/funding paid: 0.00

Gross closed-trade profit before fees: 64,953.12

Reconciliation gap (should be 0.00): -0.00

Trade distribution:

Largest win: 14,586.31

Largest loss: -7,404.89

Average trade PnL: 107.43

Expectancy per trade: 107.43

Mean position size (USD): 16,081.90

Median position size (USD): 10,062.34

Data quality / outlier report:

Datetime index: True

Timezone aware: True

Duplicate timestamps: 0

Missing bars: 16

Outlier bars ($|z| > 5$ on close returns): 70

Recommendations:

- Outlier bars detected: verify candles around spikes and consider robust filters.
- Missing bars detected: fill or remove gaps before comparing strategy variants.

Robustness warnings:

- CAGR drops >40% without top 5% winners
- Sign-flip stress test indicates fragility

Robustness Summary

SQN: 2.97 (tradable)
Top-trade dependency warning: True
Sign-flip stress warning: True
Regime dependency warning: False
Robustness score: 2/4 (moderate)

Top 5% Winners Removal Test

Trades removed: 30
CAGR drop: 142.04%
Reduced CAGR: -11.04%
Reduced Sharpe: -0.79
Reduced Profit Factor: 0.76
Reduced Max Drawdown: -66.82%

Sign-Flip Stress Test (100 runs, 15% flips)

Average CAGR: 17.31%
Median CAGR: 17.68%
Average Max Drawdown: -33.25%

First Half vs Second Half

First half CAGR/Sharpe: 23.38% / 1.05
Second half CAGR/Sharpe: 29.38% / 1.01
CAGR diff: 25.66%
Sharpe diff: 3.66%

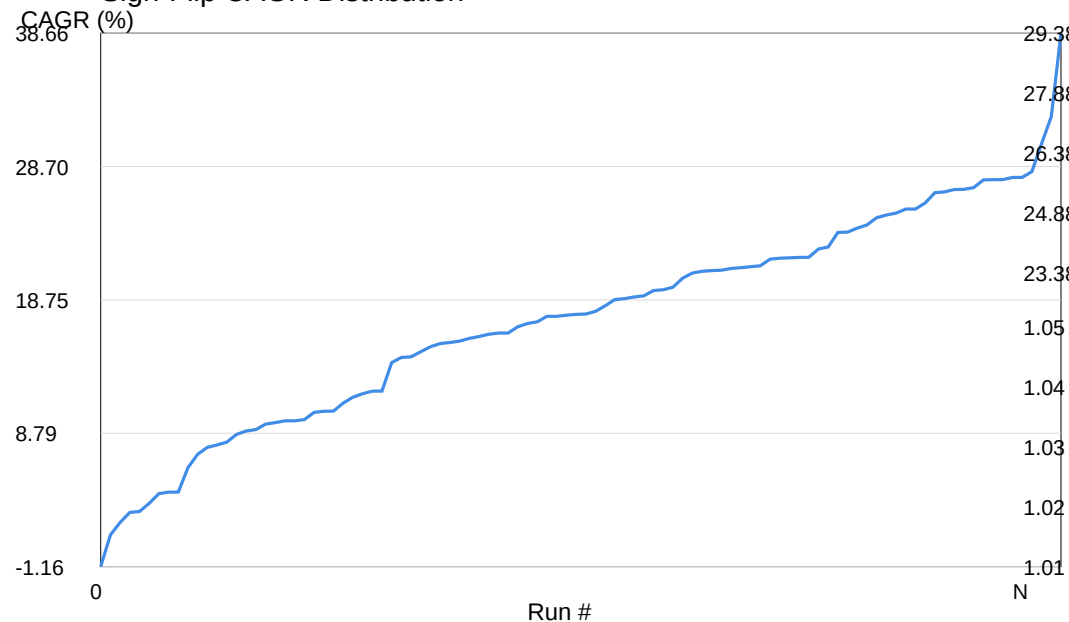
Robustness Checks Table

Test	Result	Status
SQN	2.97	PASS
Top 5% winners	142.0% CAGR drop	WARN
Sign-flip stress	median 17.68% CAGR	WARN
Half stability	CAGR 25.7% / Sharpe 3.7%	PASS

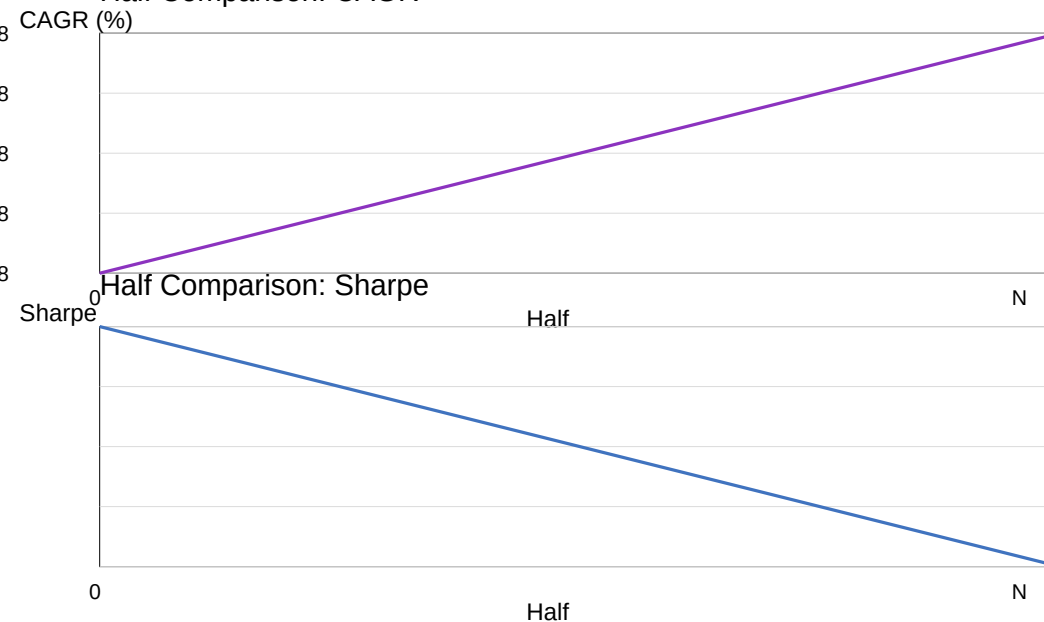
Equity Curve Without Top 5% Trades



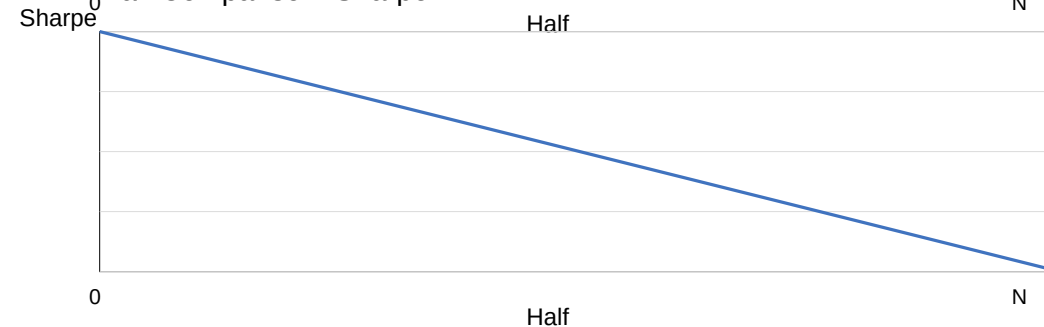
Sign-Flip CAGR Distribution



Half Comparison: CAGR



Half Comparison: Sharpe



CLI Flags Used for This Backtest (page 1)

All command-line options and values for reproducibility.

--allow-close-on-1w-a: True
--allow-close-on-1w-a-min-unrealized-return: 0.15
--allow-close-on-1w-d: True
--allow-close-on-1w-d-min-unrealized-return: 0.15
--asset-allocation: 1.0
--asset-size: []
--borrow-annual: 0.0
--bw-1w-contracts: 6
--bw-1w-divergence-filter-bars: 240
--bw-1w-gator-open-lookback: 180
--bw-1w-gator-open-percentile: 0.0
--bw-atr-ut-filter: False
--bw-atr-ut-filter-allow-filtered-reversals: True
--bw-atr-ut-filter-csv: .\examples\BINANCE_BTCUSD30m.csv
--bw-atr-ut-filter-detection-mode: intrabar
--bw-atr-ut-filter-key-value: 1.0
--bw-atr-ut-filter-period: 10
--bw-atr-ut-filter-timeframe: 30m
--bw-atr-ut-filter-timestamp-convention: open
--bw-atr-ut-flip-stop: False
--bw-atr-ut-independent-contracts: 0.0
--bw-atr-ut-independent-trades: False
--bw-atr-ut-trading-halt-csv: None
--bw-atr-ut-trading-halt-detection-mode: None
--bw-atr-ut-trading-halt-direction: none
--bw-atr-ut-trading-halt-key-value: None
--bw-atr-ut-trading-halt-period: None
--bw-atr-ut-trading-halt-timeframe: None
--bw-atr-ut-trading-halt-timestamp-convention: None
--bw-close-on-underlying-gain-pct: 0.25
--bw-fractal-add-on-contracts: 3
--bw-fractal-add-ons-enabled: True
--bw-ntd-initial-fractal-contracts: 1
--bw-ntd-initial-fractal-enabled: False
--bw-ntd-ranging-lookback: 20
--bw-ntd-ranging-max-span-pct: 0.025

CLI Flags Used for This Backtest (page 2)

All command-line options and values for reproducibility.

```
--bw-ntd-sleeping-gator-lookback: 50
--bw-ntd-sleeping-gator-tightness-mult: 0.75
--bw-only-trade-1w-r: False
--bw-peak-drawdown-exit: False
--bw-peak-drawdown-exit-annualized-volatility-scaler: 1.0
--bw-peak-drawdown-exit-pct: 0.01
--bw-peak-drawdown-exit-volatility-lookback: 20
--bw-profit-protection-green-lips-annualized-volatility-scaler: 0.0
--bw-profit-protection-green-lips-exit: True
--bw-profit-protection-green-lips-latch-min-unrealized-return: True
--bw-profit-protection-green-lips-min-bars: 15
--bw-profit-protection-green-lips-min-unrealized-return: 0.1
--bw-profit-protection-green-lips-require-gator-direction-alignment: False
--bw-profit-protection-green-lips-volatility-lookback: 20
--bw-profit-protection-red-teeth-annualized-volatility-scaler: 0.25
--bw-profit-protection-red-teeth-exit: True
--bw-profit-protection-red-teeth-latch-min-unrealized-return: False
--bw-profit-protection-red-teeth-min-bars: 15
--bw-profit-protection-red-teeth-min-unrealized-return: 0.05
--bw-profit-protection-red-teeth-require-gator-direction-alignment: False
--bw-profit-protection-red-teeth-volatility-lookback: 20
--bw-profit-protection-sigma-move-exit: False
--bw-profit-protection-sigma-move-lookback: 90
--bw-profit-protection-sigma-move-sigma: 5.0
--bw-profit-protection-zones-annualized-volatility-scaler: 0.25
--bw-profit-protection-zones-exit: True
--bw-profit-protection-zones-min-bars: 15
--bw-profit-protection-zones-min-same-color-bars: 5
--bw-profit-protection-zones-min-unrealized-return: 0.05
--bw-profit-protection-zones-volatility-lookback: 20
--capital: 10000.0
--chart-max-bars: None
--csv: .\examples\BINANCE_BTCUSD4h.csv
--end: 2026-03-01
--equity-cutoff: 1000.0
--fee: 0.0001
```

CLI Flags Used for This Backtest (page 3)

All command-line options and values for reproducibility.

--funding-per-period: 0.0
--gator-width-lookback: 50
--gator-width-mult: 1.0
--gator-width-valid-factor: 1.0
--initial-capital: 10000.0
--leverage-stop-out: 0.001
--max-leverage: 20.0
--max-loss: None
--max-loss-pct-of-equity: None
--max-position-size: None
--ntd-ao-ac-near-zero-factor: 0.25
--ntd-ao-ac-near-zero-lookback: 50
--ntd-require-gator-close-reset: None
--order-type: stop
--out: .\artifacts_new_2020to2026
--overnight-annual: 0.0
--size-equity-milestones:
--size-min-usd: 0.0
--size-mode: volatility_scaled
--size-value: 0.1
--skip-chart: False
--skip-pdf: False
--skip-pine: False
--skip-runtime-estimate: False
--slippage: 1e-05
--spread: 0.0
--start: 2017-06-01
--strategy: bw
--volatility-lookback: 20
--volatility-max-scale: 3.0
--volatility-min-scale: 0.25
--volatility-target-annual: 0.25
--wiseman-1w-contracts: 1
--wiseman-1w-divergence-filter-bars: 0
--wiseman-1w-opposite-close-min-unrealized-return: 0.0
--wiseman-1w-wait-bars-to-close: 0

CLI Flags Used for This Backtest (page 4)

All command-line options and values for reproducibility.

```
--wiseman-2w-contracts: 3
--wiseman-3w-contracts: 5
--wiseman-cancel-reversal-on-first-exit: False
--wiseman-gator-direction-mode: 1
--wiseman-profit-protection-annualized-volatility-scaler: 1.0
--wiseman-profit-protection-credit-unrealized-before-min-bars: False
--wiseman-profit-protection-lips-arm-on-min-unrealized-return: False
--wiseman-profit-protection-lips-exit: False
--wiseman-profit-protection-lips-min-unrealized-return: 1.0
--wiseman-profit-protection-lips-profit-trigger-mult: 2.0
--wiseman-profit-protection-lips-recent-trade-lookback: 5
--wiseman-profit-protection-lips-volatility-lookback: 20
--wiseman-profit-protection-lips-volatility-trigger: 0.02
--wiseman-profit-protection-min-bars: 3
--wiseman-profit-protection-min-unrealized-return: 1.0
--wiseman-profit-protection-require-gator-open: True
--wiseman-profit-protection-teeth-exit: False
--wiseman-profit-protection-volatility-lookback: None
--wiseman-profit-protection-zones-exit: False
--wiseman-profit-protection-zones-min-unrealized-return: 1.0
--wiseman-reversal-contracts-mult: 1.0
--wiseman-reversal-cooldown: 0
```