TEMA on Tesla · fixed and volatility-based sizing

Strategy evaluated · **Nivel de evidencia** Histórico · Development · Sample 2013-01-03 14:30:00+00:00 to 2018-12-31 14:30:00+00:00

N/A marks an undefined or missing value. Return and risk fractions are shown as percentages. The JSON evidence preserves the original precision of the results.

Assessment limits

Survivorship bias. Not assessed. Historical universe membership is missing (SURVIVORSHIP_BIAS_NOT_CONTROLLED).

Look-ahead bias. Not assessed. The report does not verify when signals became available.

Multiple testing. DSR and PBO cannot be assessed from the evidence supplied.

Costs and execution. Gross and net returns were reconciled with recorded costs. Cost sensitivity and actual execution were not assessed.

Use of AI. The evidence does not say whether Strateva used AI in the review.

Advice. This report does not constitute investment advice.

Performance and risk

Absolute performance · Strategy and benchmark

Metric	Strategy	Benchmark
Observations `n_obs`	1509	1509
Periods per year `annualization`	252	252
Annual risk-free rate `risk_free_annual`	0%	0%
Cumulative return `total_return`	-32.433%	-72.454%
Annualized compound return (CAGR) `cagr`	-6.33745%	-19.3711%
Annualized arithmetic return `annual_return_arithmetic`	-3.75054%	-8.06096%
Annualized volatility `annual_volatility`	23.6351%	51.8395%
Sharpe `sharpe`	-0.1586854	-0.1554984
Sortino `sortino`	-0.2214925	-0.2196725
Maximum drawdown `max_drawdown`	-56.4006%	-90.1873%
Periods to the maximum drawdown trough `max_drawdown_underwater_periods`	785	1363
Periods from the previous peak to recovery `max_drawdown_recovery_periods`	N/A	N/A
Calmar `calmar`	-0.1123649	-0.2147872
Share of positive periods `positive_period_rate`	49.9006%	49.9006%
Alias for the share of positive periods `hit_rate`	49.9006%	49.9006%

Absolute performance · Strategy and benchmark		
Metric	**Strategy**	**Benchmark**
Skewness `skewness`	-0.07496938	0.1039149
Excess kurtosis `excess_kurtosis`	4.114761	5.819087

Active performance · Strategy versus benchmark	
Field	**Value**
Observations `n_obs`	1509
Periods per year `annualization`	252
Annual risk-free rate `risk_free_annual`	0%
Annualized active return `active_return_annual`	4.31042%
Annualized tracking error `tracking_error_annual`	30.9777%
Information ratio `information_ratio`	0.1391458
Correlation with the benchmark `correlation`	0.9330213
Beta `beta`	0.4253905
Annualized regression alpha `regression_alpha_annual`	-0.321486%
Annualized Jensen alpha `jensen_alpha_annual`	-0.321486%
Strategy Sharpe ratio `strategy_sharpe`	-0.1586854
Benchmark Sharpe ratio `benchmark_sharpe`	-0.1554984

Statistical uncertainty

Strategy · Mean excess return · HAC	
Field	**Value**
Status `status`	evaluated
Observations `n_obs`	1509
Lags `lags`	7
Weighting kernel `kernel`	bartlett
Estimate per period `estimate`	-0.0148831%
Annualized estimate `annualized_estimate`	-3.75054%
Standard error `standard_error`	0.0398321%
Annualized standard error `annualized_standard_error`	10.0377%

Strategy · Mean excess return · HAC	
Field	**Value**
t-statistic `t_stat`	-0.3736456
Two-sided p-value (normal) `p_value_two_sided_normal`	0.708668

Strategy · Sharpe ratio interval · block bootstrap	
Field	**Value**
Observations `n_obs`	1509
Block length `block_length`	11
Replications `repetitions`	1000
Seed `seed`	20261117
Confidence level `confidence`	95%
Lower-tail probability `lower_probability`	2.5%
Upper-tail probability `upper_probability`	97.5%
Replications attempted `attempted_repetitions`	1000
Valid replications `valid_repetitions`	1000
Replications with no defined estimate `undefined_repetitions`	0
Status `status`	evaluated
Point estimate `point_estimate`	-0.1586854
Standard error `standard_error`	0.4317148
Lower interval bound `ci_lower`	-0.9504514
Upper interval bound `ci_upper`	0.7179051

Benchmark · No uncertainty estimate supplied.

Active performance · Mean active return · HAC	
Field	**Value**
Status `status`	evaluated
Observations `n_obs`	1509
Lags `lags`	7
Weighting kernel `kernel`	bartlett
Estimate per period `estimate`	0.0171048%

Active performance · Mean active return · HAC	
Field	**Value**
Annualized estimate `annualized_estimate`	4.31042%
Standard error `standard_error`	0.0508718%
Annualized standard error `annualized_standard_error`	12.8197%
t-statistic `t_stat`	0.3362339
Two-sided p-value (normal) `p_value_two_sided_normal`	0.7366945

Active performance · Information ratio interval · block bootstrap	
Field	**Value**
Observations `n_obs`	1509
Block length `block_length`	11
Replications `repetitions`	1000
Seed `seed`	20261117
Confidence level `confidence`	95%
Lower-tail probability `lower_probability`	2.5%
Upper-tail probability `upper_probability`	97.5%
Replications attempted `attempted_repetitions`	1000
Valid replications `valid_repetitions`	1000
Replications with no defined estimate `undefined_repetitions`	0
Status `status`	evaluated
Point estimate `point_estimate`	0.1391458
Standard error `standard_error`	0.4268733
Lower interval bound `ci_lower`	-0.6797086
Upper interval bound `ci_upper`	0.9891246

Subperiods and robustness

Additional metrics · No evidence supplied.

Verification and configuration

Engine checks	
Field	**Value**
Schemas valid `schema_valid`	Yes
Evidence hash valid `hash_valid`	Yes
Signature verified `signature_verified`	No
Confirmatory provenance verified `confirmatory_provenance_verified`	No
`reconciliation.tolerance`	1e-09
Status `reconciliation.status`	reconciled
Metric paths checked `reconciliation.checkedPathCount`	96
Hash bindings valid `hash_bindings_valid`	Yes
Metrics reconciled `metrics_reconciled`	Yes
Simulations reproduced `simulations_reproduced`	Yes
`kernelVersion`	1.1.0

Decision thresholds · No evidence supplied.

Engine configuration	
Field	**Value**
Periods per year `annualization`	252
Annualization method `annualizationMethod`	declared by StrategyTrace.frequency.periodsPerYear
Annual risk-free rate `riskFreeAnnual`	0%
`allowPositional`	No
`timezone`	UTC
`calendar`	XNYS
Confidence level `uncertainty.confidence`	95%
`uncertainty.hacLagPolicy.kind`	sample-size-bartlett-v1
`uncertainty.timeBasis.kind`	session-grid
Expected calendar hash `uncertainty.timeBasis.expectedEndsHash`	`3e0132cdc6f07e927a231f07812fe3dca80f58055def6d1a27e759404620db1b`
Block length `uncertainty.blockLength`	11
Replications `uncertainty.repetitions`	1000
Seed `uncertainty.seed`	20261117

Monte Carlo

Observed path

Field	Value
Terminal wealth (multiple) `terminalWealth`	0.6756695
Cumulative return `totalReturn`	-32.433%
Maximum drawdown magnitude `maximumDrawdown`	56.4006%
Longest stretch below the peak (periods) `longestUnderwaterStreakPeriods`	1376
Share of periods below the peak `timeUnderWaterFraction`	98.0119%
Longest losing streak (periods) `longestLosingStreak`	10
Ruin threshold reached `ruined`	No

Circular block bootstrap

Metric	Minimum	Mean	Maximum	Quantiles
Terminal wealth (multiple) `terminalWealth`	0.08532787	0.8108003	3.746582	5% = 0.2530125 · 50% = 0.6682741 · 95% = 1.817104
Cumulative return `totalReturn`	-91.4672%	-18.92%	274.658%	5% = -74.6987% · 50% = -33.1726% · 95% = 81.7104%
Maximum drawdown magnitude `maximumDrawdown`	21.9169%	57.7066%	92.5472%	5% = 33.5564% · 50% = 58.1409% · 95% = 80.8067%
Longest stretch below the peak (periods) `longestUnderwaterStreakPeriods`	173	1103.732	1509	5% = 447.65 · 50% = 1185 · 95% = 1506
Share of periods below the peak `timeUnderWaterFraction`	91.1862%	98.0589%	100%	5% = 94.556% · 50% = 98.5421% · 95% = 99.9337%
Longest losing streak (periods) `longestLosingStreak`	6	9.718	16	5% = 7 · 50% = 9 · 95% = 13
Probability of reaching the ruin threshold `ruinProbability`		46.3%		

Return-order permutation

Metric	Minimum	Mean	Maximum	Quantiles
Maximum drawdown magnitude `maximumDrawdown`	35.0728%	55.4392%	75.6969%	5% = 42.7934% · 50% = 55.5871% · 95% = 68.0001%
Longest stretch below the peak (periods) `longestUnderwaterStreakPeriods`	366	1184.266	1509	5% = 667 · 50% = 1252.5 · 95% = 1506
Share of periods below the peak `timeUnderWaterFraction`	93.7707%	98.6042%	100%	5% = 96.6865% · 50% = 98.8072% · 95% = 99.9337%
Longest losing streak (periods) `longestLosingStreak`	6	9.788	18	5% = 7 · 50% = 10 · 95% = 13
Probability of reaching the ruin threshold `ruinProbability`		28.1%		

Simulation settings and bindings

Field	Value
`simulationSchemaVersion`	strateva-simulation-evidence/v2

Simulation settings and bindings	
Field	**Value**
`engineVersion`	0.9.0
`kernelVersion`	1.1.0
`observationCount`	1509
`strategyTraceHash`	`c10bbbc769bc245ecf0e074f07dce43d634b96902abf6cdfa3b165753aea0be5`
`contentHash`	`ffe679d02779650d9e3cfd74a48562d92e49c36970fb1ae070755cafcaff2733`
Replications `configuration.repetitions`	1000
Seed `configuration.seed`	20261117
Block length `configuration.blockLength`	11
Initial wealth `configuration.initialWealth`	1
Ruin threshold (share of initial wealth) `configuration.ruinWealthFraction`	50%
`configuration.quantiles`	5% · 50% · 95%
`classic.method`	CIRCULAR_MOVING_BLOCK_BOOTSTRAP
`classic.sampling`	WITH_REPLACEMENT
`permuted.method`	FISHER_YATES_RETURN_ORDER_PERMUTATION
`permuted.sampling`	WITHOUT_REPLACEMENT
Terminal wealth invariant `permuted.terminalWealthInvariant`	Yes
Terminal wealth (multiple) `permuted.terminalWealth`	0.6756695

Provenance and traceability

Evidence and input hashes	
Field	**Value**
`bundleSchemaVersion`	strateva-evidence-bundle/v3
`artifactId`	`urn:strateva:strategy-trace:c10bbbc769bc245ecf0e074f07dce43d634b96902abf6cdfa3b165753aea0be5`
`engineVersion`	0.9.0
`kernelVersion`	1.1.0
`generatedAt`	2026-11-17T15:59:36Z
`contentHash`	`01075a73913e0d281459167d8207df46734cba992905f35891dbfea1e57f9cde`
Strategy return series hash `inputHashes.strategyReturns`	7dc90a7353520ca69708a41ea88664a953614c53f3a842ccfcdd69a3489ab202
Benchmark return series hash `inputHashes.benchmarkReturns`	5ae2b73b3d2e2198321fdb84db78c8a84987d28d76ff74a635525c4acdc03f80

Evidence and input hashes	
Field	**Value**
`lineage`	strategyTrace:c10bbbc769bc245ecf0e074f07dce43d634b96902abf6cdfa3b165753aea0be5 · scope:655f1ac902fbc6c82d9eee0b54edc17275f22825d5cf97e287e19269c8867e09 · artifact:2c5996b45d2adcbd93bf5f7deec4305277183252c97140a962330c6b3c7ac423 · data:116c64537dee754a206c9b687f3c21550d14742d9a7d4a4d71c5b2ea0ace52c8

Provenance statement	
Field	**Value**
`claim`	development
`runId`	N/A
`freezeHash`	N/A
`engineCommit`	N/A
`containerImageDigest`	N/A

Evidence signature · No evidence supplied.

StrategyTrace · Identity, frequency, conventions and benchmark	
Field	**Value**
`traceSchemaVersion`	strateva-strategy-trace/v1
`engagementId`	eng-e280a601
`runId`	tema-volatility-target-20-vs-base-development
`generatedAt`	2026-11-17T15:59:36Z
`scopeContentHash`	`655f1ac902fbc6c82d9eee0b54edc17275f22825d5cf97e287e19269c8867e09`
`artifactContentHash`	`2c5996b45d2adcbd93bf5f7deec4305277183252c97140a962330c6b3c7ac423`
`dataContentHash`	`116c64537dee754a206c9b687f3c21550d14742d9a7d4a4d71c5b2ea0ace52c8`
`frequency.barInterval`	1d
Periods per year `frequency.periodsPerYear`	252
`frequency.calendar`	XNYS
`frequency.sourceTimezone`	America/New_York
`conventions.returnType`	SIMPLE
`conventions.returnUnit`	FRACTION
`conventions.timestampMeaning`	UTC_PERIOD_END
`conventions.turnover`	SUM_ABSOLUTE_POSITION_CHANGES
`conventions.exposure`	FRACTION_OF_EQUITY
`conventions.costs`	RETURN_FRACTION
`benchmark.kind`	SERIES
`benchmark.symbol`	TEMA-BASE
`contentHash`	`c10bbbc769bc245ecf0e074f07dce43d634b96902abf6cdfa3b165753aea0be5`

Notes included in the evidence	
Field	**Value**
`disclosures`	The engine recomputed the metrics from verified StrategyTrace net returns. · Monte Carlo has its own hash. It affects criteria only if preregistered for that purpose.