Gaussian mixture regimes on SPY

Returns from 2020-03-17 to 2024-12-31 · 1,207 observations

CONCLUSION HISTORICAL

The benchmark-relative difference is indistinguishable from zero in this sample

Information ratio interval (95.00%): −0.94 to 0.77. This evidence declares no decision criteria.

PERFORMANCE AND RISK

RETURNS

Cumulative return

107.01% versus 120.35% for URTH.

RISK

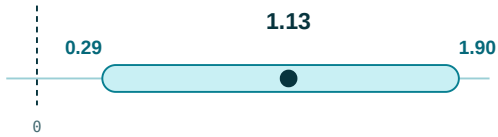
Annualized volatility

12.36% versus 18.09% for URTH.

KEY FIGURES

METRIC	STRATEGY	BENCHMARK
Annualized compound return	**16.41%**	17.93%
Sharpe	**1.13**	0.89
Maximum drawdown	**−14.68%**	−26.90%

Strategy Sharpe ratio interval



The bar shows the 95.00% interval for the strategy Sharpe ratio. Standard error 0.42.

SCOPE OF THE RESULT

EVIDENCE LEVEL **Historical**

- **Scope.** The report summarizes the return series in the bundle.
- **Signature.** No verified signature. Confirmatory provenance unverified.
- The engine recomputed the metrics from verified StrategyTrace net returns.
- **Annualization.** 252 periods per year. Annual risk-free rate 2.00%.
- **Uncertainty.** The bootstrap resamples the same historical return series. A directional statement requires agreement between the interval and the HAC test. With few observations, both methods can overstate the evidence.
- Monte Carlo has its own hash. It affects criteria only if preregistered for that purpose.

Gaussian mixture regimes on SPY · Metrics

Performance, risk, statistical uncertainty and test settings.

PERFORMANCE AND RISK

METRIC	STRATEGY	BENCHMARK
Annualized compound return	**16.41%**	17.93%
Annualized arithmetic return	**15.96%**	18.13%
Cumulative return	**107.01%**	120.35%
Annualized volatility	**12.36%**	18.09%
Sharpe	**1.13**	0.89
Sortino	**1.74**	1.32
Calmar	**1.12**	0.67
Maximum drawdown	**−14.68%**	−26.90%
Periods from peak to trough	**56**	233
Periods to recover the peak	**253**	564
Periods with positive returns	**19.88%**	54.52%
Skewness	**0.20**	0.32
Excess kurtosis	**12.72**	6.38

RELATIVE TO BENCHMARK

METRIC	ESTIMATE
Annualized arithmetic difference	−2.17%
Tracking error	13.94%
Information ratio	−0.16
Beta	0.44
Correlation	0.64
Annualized Jensen alpha	6.93%

BOOTSTRAP UNCERTAINTY

METRIC	INTERVAL
Sharpe	0.29 to 1.90
Information ratio	−0.94 to 0.77
Sharpe ratio standard error	0.42
Valid bootstrap resamples	1,000
Block length	11
Confidence level	95.00%

CONFIGURATION

SETTING	VALUE
Annualization	252
Annual risk-free rate	2.00%
Calendar	XNYS
Time zone	UTC
Index	Chronological

EVIDENCE VERIFICATION

CHECK	RESULT
Schema	Verified
Content hash	Verified
Reconciliation	Reconciled
Signature	No verified signature
Confirmatory provenance	Unverified

CRITERIA EVALUATED

This evidence declares no decision criteria.

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.