SIGNAL RESEARCH NOTE

Managed Futures ETF Capacity-Aware Execution Diagnostic

CTA-style ETF replication with capacity-aware execution constraints.

FAMILY	UNIVERSE	RESEARCH HORIZON
Listed ETF CTA execution research	**Liquid macro ETF exposure panel**	**Full sample**

Executive Summary

This note reviews a capacity-aware version of the managed-futures ETF replication study. The evidence is framed as execution-capacity research and replication diagnostics, not as a current positioning view.

Primary diagnostic	**Capacity-aware rep tio**
Full-sample correlation	**0.571**
Post-2020 correlation	**0.579**
Tracking error	**9.04%**
500m max ADV participation	**5.00%**

Observations

1. Capacity-aware execution keeps parti ation w hin the diagnostic threshold at the 500m size.
2. Replication fit is weaker than the ss constrained variant, which is the expected trade-off.
3. The result is b st re d as an e cution-capacity diagnostic, not a standalone product.

Data and Research Setup

The capacity setup applies an execution constraint to the ETF replication stream and reviews the resulting return and participation diagnostics.

Universe

Liquid macro ETF exposure panel used for listed ETF CTA replication research.

Inputs

Daily ETF return inputs, diagnostic execution weights and trailing dollar-volume capacity estimates.

Windows

Full sample, pre-2020, post-2020, 2022 rates/inflation window and recent 2023-2026 window.

Exclusions

Current weights, latest tickers and live exposure views are intentionally excluded.

Signal Methodology

Without disclosing the exact functional, the construction proceeds along three conceptual steps.

STEP 1

Signal translation

The CTA-style ETF signal is translated into a diagnostic execution stream.

STEP 2

Capacity-aware execution

Daily trade changes are constrained against trailing dollar-volume capacity assumptions.

STEP 3

Replication review

The constrained stream is evaluated through correlation, tracking error, drawdown and participation diagnostics.

> The description is intentionally conceptual. Formula details, exact construction rules and implementation parameters are not disclosed.

Results and Horizon Context

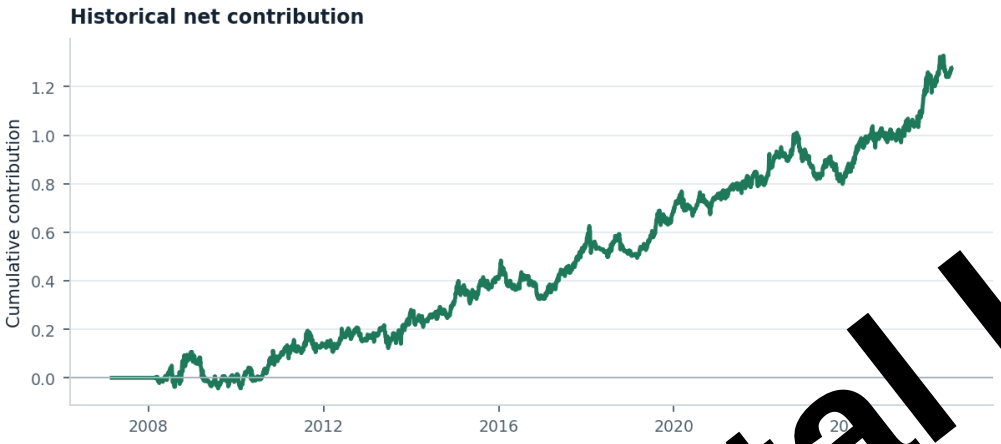

Figure 1. Cumulative net contribution, normalised to zero at the first research date. The series is a historical execution diagnostic, not a standalone portfolio NAV.

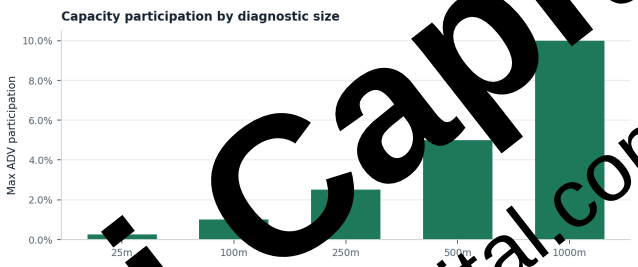

Figure 2. Maximum ADV participation across diagnostic size levels. Instrument names are intentionally omitted.

WINDOW	DAILY CORR	BETA	TRACKING ERROR	STRATEGY CAGR
Full Sample	0.571	0.768	9.04%	6.90%
Pre 2020	0.566	0.740	8.45%	5.48%
Post 2020	0.579	0.794	10.13%	9.85%
Inflation Rates 2022	0.815	0.897	6.49%	22.63%
Recent 2023–2026	0.491	0.726	11.78%	10.82%

The constrained variant improves capacity discipline but gives up some replication fit. That trade-off is the central result of this note.

Stability and Robustness

Stability is assessed through replication fit by window and the diagnostic capacity profile.

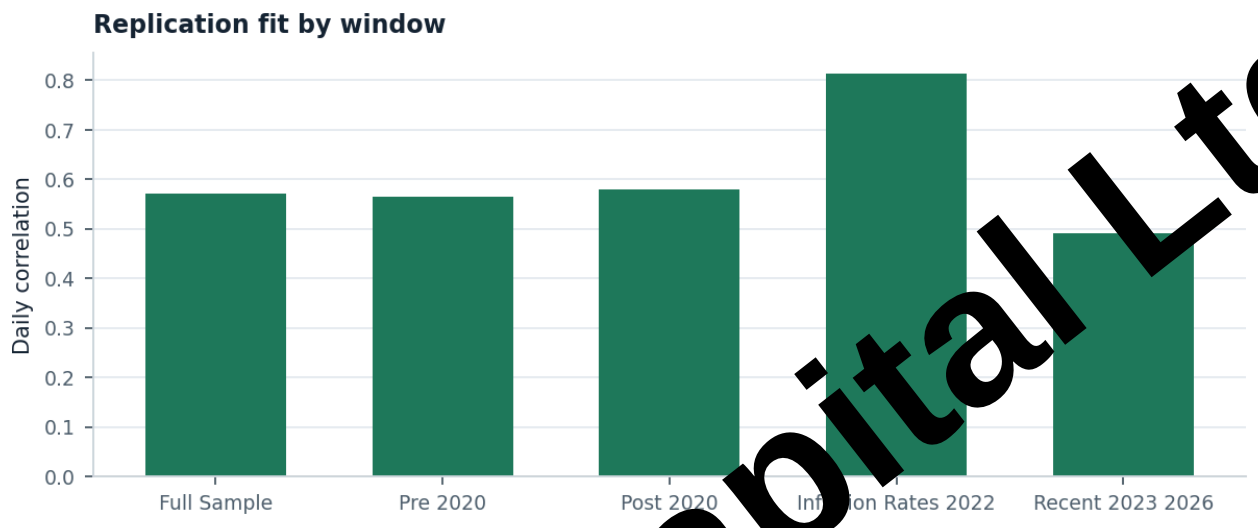

Figure 3. Daily correlation by historical evaluation window for the capacity-aware ea

SIZE	P95 PARTICIPATION	MAX PARTICIPATION	STATUS
$25m	0.25%	0.25%	Pass
$100m	1.00%	1.00%	Pass
$250m	2.50%	2.50%	Pass
$500m	5.00%	5.00%	Pass
$1000	10.00%	10.00%	Watchlist

The capacity profile is orderly through the 500m diagnostic size, while the recent replication window remains weaker than the full sample.

Research Interpretation

The balanced interpretation is to treat the variant as capacity-aware execution research in the CTA replication library.

Role in library

Capacity and execution diagnostic for ETF-based CTA replication research.

Captures

The effect of execution constraints on a historical CTA-style ETF replication stream.

Where useful

Useful when comparing unconstrained replication evidence with more realistic execution-capacity assumptions.

Known limitations

Capacity assumptions are historical diagnostics. Formula details, exact construction rules and current exposure weights are not disclosed.