

Building dynamic quantitative systems for investment firms

Tirmann is a quantitative software studio specialising in the research, development and licensing of systematic algorithmic portfolios for investment firms.

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Investment philosophy and
operational model.

OVERVIEW

Tirmann was founded following five years of hands-on R&D and live operation of quantitative strategies across index and commodity futures. In systematic trading, theoretical knowledge sets the framework, but it is live market exposure that separates robust systems from well-constructed backtests. Everything built at Tirmann has been forged through years of direct market operation, iterative refinement, and continuous validation against real execution conditions.

Tirmann develops and licenses algorithmic frameworks and strategy architectures validated through exhaustive out-of-sample testing, walk-forward analysis, and Monte Carlo stress simulations, ensuring full auditability with zero discretionary override. Critically, every strategy licensed is traded simultaneously on proprietary capital. Full skin-in-the-game, and complete alignment of interests.

THE PROBLEM: STATIC MODEL DECAY

Most quantitative failures stem from "static model decay." A strategy optimized for a specific market regime (e.g., low volatility bull market) inevitably degrades when market structure shifts.

Dynamic lifecycle

We do not deliver static code; we manage a dynamic strategy lifecycle:

Structural diversification

Our systems are designed to capture specific market anomalies across non-correlated markets, primarily indices and commodities. By balancing exposure across distinct asset classes and logic frameworks, the architecture is engineered to minimize cross-strategy correlation and eliminate single-point-of-failure risks.

ARCHITECTURAL CORE PILLARS

Surviving market regime shifts requires more than just a statistical edge; it demands an infrastructure built on absolute transparency, deep execution liquidity, and systematic risk containment. The Tirmann framework rests on three uncompromising pillars:

Systematic rigor

Every parameter is grounded in structural market anomalies.

Operational scalability

Our architecture is engineered exclusively for deep-liquidity futures (CME).

Risk governance

Predefined mathematical kill-switches at the strategy and portfolio levels.

■ MICRO-STRUCTURAL AND TACTICAL EDGE

OHLC and volatility architecture

Systematic analysis of discrete price action, dynamic daily ranges, and intraday breakout/mean-reversion mechanics based on rolling volatility Z-scores.

Momentum and mean-reversion metrics

Statistical measurement of price velocity and mathematical deviations from structural means to optimize entry/exit timing for complex reversal and breakout patterns.

Structural market cycles

Quantitative tracking of multi-timeframe price cycles to identify underlying structural trends and govern alpha regime transitions.

■ MACRO-FUNDAMENTAL OVERLAY AND CAPITAL FLOWS

Proprietary nowcasting regimes

Automated processing of leading global macroeconomic indicators to algorithmically classify macro regimes (Goldilocks, Reflation, Stagflation, Deflation).

CFTC capital flows and crowding factors

Normalization and quantitative screening of CFTC Commitment of Traders data to exploit market participant positioning, actively avoiding liquidity squeezes at historical sentiment extremes.

■ ADVANCED INFRASTRUCTURE AND PROPRIETARY TOOLING

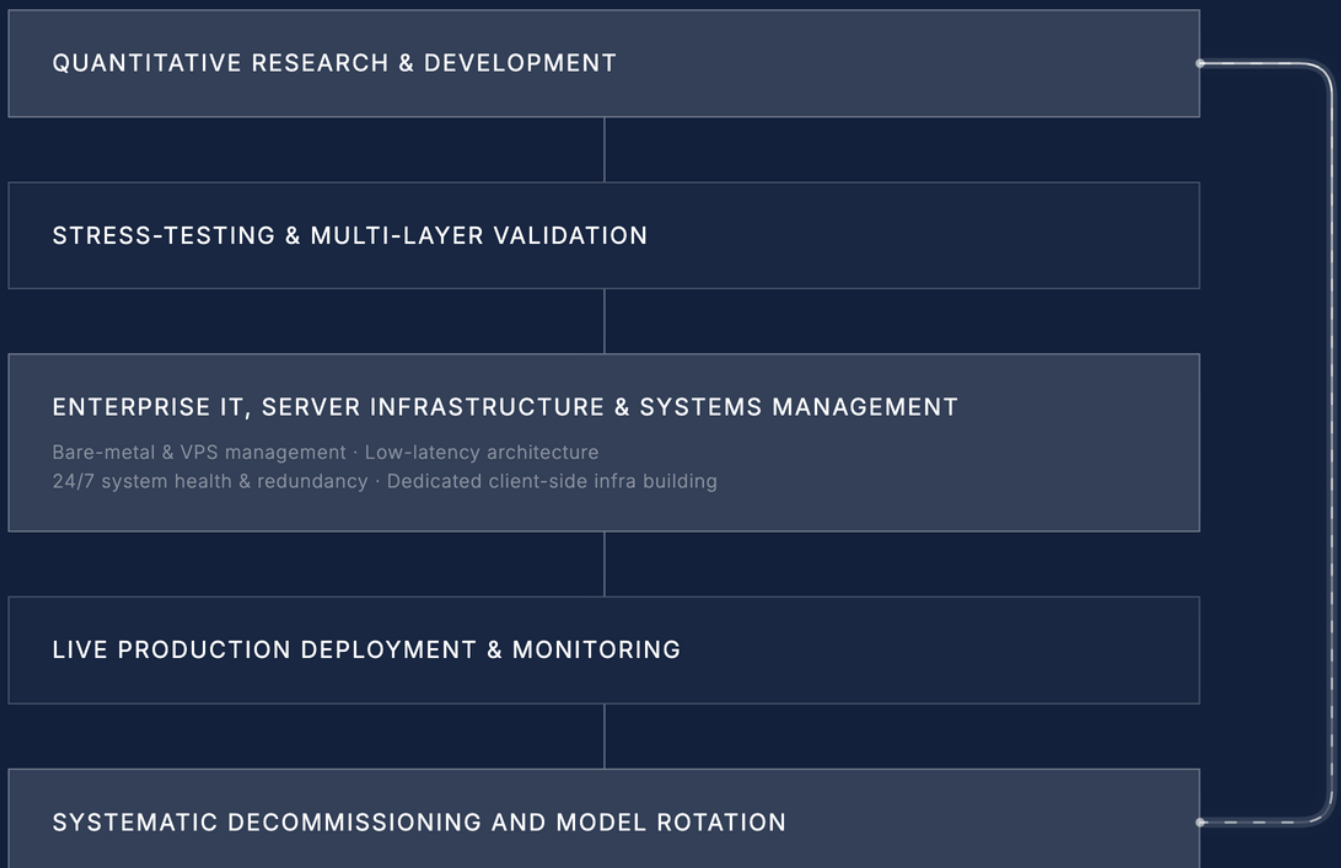
Macro data extraction engine

Automated production pipeline designed to ingest, clean, and structure global macro indicators and Nowcasting datasets into mathematically auditable signals.

Dynamic rotation software

Algorithmic execution module that systematically manages cross-strategy capital reallocation and strategy decommissioning based on real-time multi-layer risk indicators.

The validation gauntlet and infrastructure.



VALIDATION PROCESS

Every model must pass through our proprietary validation funnel to ensure statistical significance.

Hypothesis-driven research

Strategies are built on economic or structural premises, not random data mining.

Walk-Forward analysis

Dynamic optimization testing to ensure parameters adapt to changing market conditions without over-fitting.

Statistical stress testing

This delivers a mathematically bounded risk profile within a strict 95% confidence interval.

Out-of-sample validation

A data-lockout period to verify that the statistical edge observed in-sample remains present on unseen data and then in a live environment.

STRATEGY UNIVERSE AND STRUCTURAL DIVERSIFICATION

Tirmann maintains a proprietary reserve of over 150 rigorously validated algorithms across all futures markets, engineered for maximum cross-market diversification and low inter-strategy correlation. This pool is in constant evolution, new models are continuously developed on novel logic frameworks and updated market data, ensuring the reserve remains statistically robust and operationally relevant over time.

Asset class

Our models span equity indices and commodity futures, balancing exposure between financial and physical delivery markets to mitigate single-sector concentration risk.

GOLD	NASDAQ	S&P500	CRUDE OIL	NATURAL GAS	CORN	PALLADIUM
LIVE CATTLE	FEEDER CATTLE	COPPER	EUROFX	SOYBEAN	ALUMINIUM	PLATINUM

Behavioral clusters

Algorithms are categorised by their underlying market logic. Trend following and mean reversion, ensuring the portfolio can capture structural anomalies across all market conditions.

The rotational reserve

We do not force all 150+ models into the market simultaneously. Instead, this universe serves as a highly qualified dynamic reserve. As market regimes shift, our framework systematically deactivates decaying models and deploys reserve strategies that possess the highest mathematical alignment with the current volatility cycle.

150+

Algorithms developed and validated

Equity indices & commodities

CME deep-liquidity futures

In constant evolution



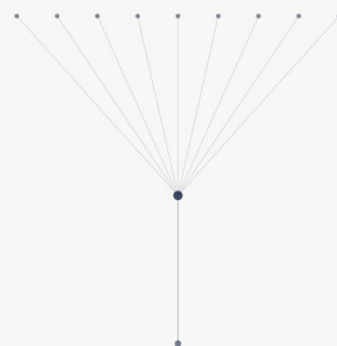
15+

Years of market data tested per model

Since January 2010

Multiple market regimes

Walk-forward validated



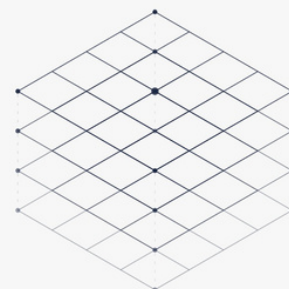
5+

Independent validation layer

Hypothesis testing

Monte Carlo stress test

Out-of-sample validation



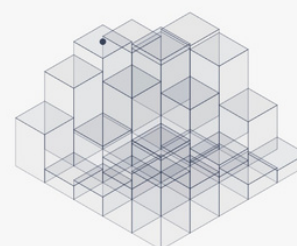
100%

Documented and fully auditable

Full Blueprint report

Zero discretionary override

Skin in the game



We build algorithmic trading systems

SYSTEMATIC SEAT CONFIGURATION & DEPLOYMENT

We assemble a cohesive strategy architecture tailored to your firm's technical setup and risk boundaries. Deployed software slots are mapped to your exact margin capacity, ensuring structural diversification and cross-market synergy.

STRATEGY DOCUMENTATION AND BLUEPRINT REPORT

Every configuration is accompanied by a detailed Blueprint report that is systematically re-issued at each monthly rotation. This continuous reporting delivers updated historical metrics and stress tests, providing your risk committee with permanent compliance auditability.

ALGORITHM LICENSING

Our proprietary software framework is accessible through a transparent, seat-based licensing structure built for complete autonomy. We enforce a clean tech-vendor model with zero profit-sharing, no discretionary control, and no capital lock-ins.

ONGOING MONITORING AND MONTHLY ROTATION

Markets evolve. So does your portfolio. Strategies falling below predefined performance criteria are systematically suspended and replaced: ensuring your portfolio remains aligned with current market regimes without requiring active management.

SERVICE AND OPERATIONAL CONTINUITY

A dedicated technical service layer runs alongside your deployment to ensure maximum system integrity. This infrastructure support provides direct-access debugging, stability oversight, and scheduled maintenance via secure VPS environments for seamless live execution.

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Live performance and drawdown analysis from Jan. 2024

29 Jan 2024 · 28 Aug 2026 · 2,180 trades · 2.6 years

LIVE • 29 JAN 2024 • 28 AUG 2026 • 2 180 TRADES

LIVE KEY PERFORMANCE INDICATORS

TOTAL P&L (NET) \$813,760	RET / DD 13.76 2.6 years	SHARPE RATIO 3.07 Sortino: 6.80	MAX DRAWDOWN -\$59,120 5 neg. months	WIN RATE 43.58% PF: 1.46
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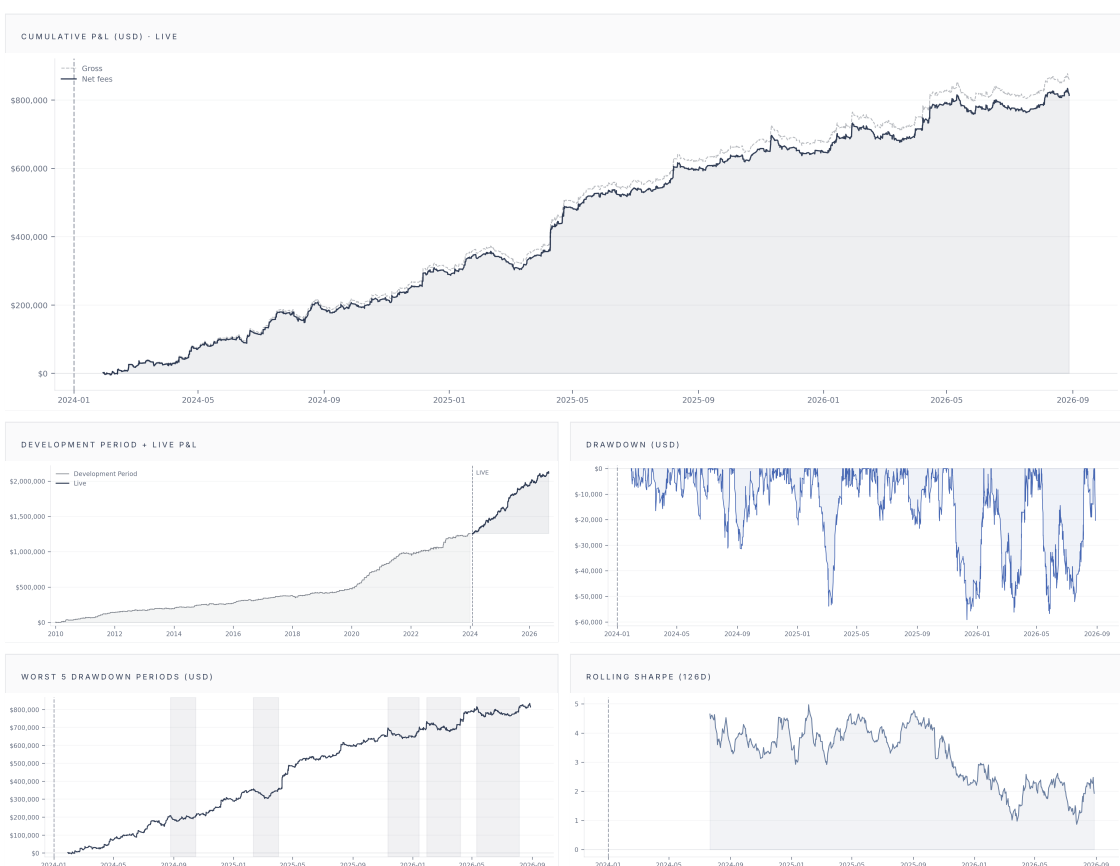
LIVE DETAILED METRICS

Overall Performance		Risk	
Total P&L (USD)	\$813,760	Max Drawdown USD	-\$59,120
Total P&L Gross	\$857,360	Distribution	
Transaction Fees	-\$43,600	Skewness	2.22
Sharpe Ratio	3.07	Excess Kurtosis (N=0)	13.54
Sortino Ratio	6.80	Trades	
Calmar Ratio	7.10	Nb Trades	2180
Omega Ratio	1.83	Fee / Trade	\$20.00 round-turn
Gain / Pain	0.83	Win Rate	43.58%
Serenity Index	17.34	Profit Factor	1.46
Recovery Factor	13.76	Expectancy (USD)	\$393
Ret / DD	13.76	R Expectancy	0.23 R
Periodic P&L (USD)		Payoff Ratio	1.70
Avg Monthly P&L	\$26,792	Best Trade	\$29,990
		Worst Trade	-\$6,110
		Avg Win	\$2,875
		Avg Loss	-\$1,693
		Max Consec. Wins	8
		Max Consec. Losses	12
		Kelly %	14.50%

	JAN 26	FEB 26	MAR 26	APR 26	MAY 26	JUN 26	JUL 26	AUG 26	TOTAL
	\$77,820	\$-21,775	\$17,240	\$75,445	\$-6,960	\$1,570	\$7,255	\$29,180	\$179,775

This report is provided for informational purposes only and does not constitute investment advice. Past performance is not indicative of future results. All figures are based on backtested or live trading data and may include estimates. Transaction fees are approximate. Results may differ materially from actual trading outcomes due to slippage, liquidity constraints, and other market factors. For institutional use only — not for public distribution.

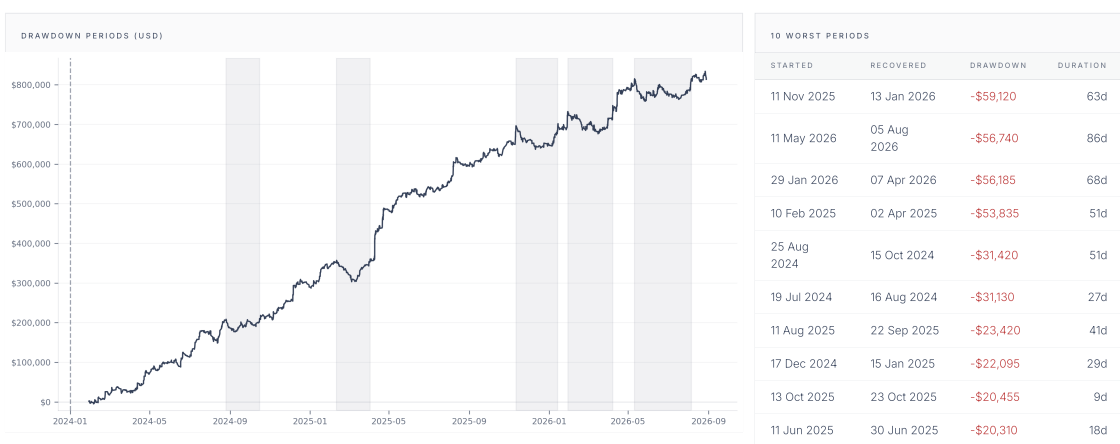
EQUITY & DRAWDOWN



MONTHLY R&I (USD) - 1 STANDARD CONTRACT

Monthly Returns Heatmap													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2024	\$-3,425	\$22,315	\$8,750	\$46,105	\$29,795	\$16,715	\$63,550	\$12,695	\$18,190	\$10,260	\$41,830	\$37,190	\$303,970
2025	\$53,945	\$-20,050	\$33,515	\$133,120	\$41,375	\$19,235	\$14,480	\$43,460	\$30,705	\$31,945	\$2,880	\$-10,995	\$373,615
2026	\$77,820	\$-21,775	\$17,240	\$75,445	\$-6,960	\$1,570	\$7,255	\$29,180					\$179,775

WORST 10 DRAWDOWN PERIODS



MONTE CARLO · 10,000 SIMULATIONS · 5% TRADES SKIPPED



CONFIDENCE LEVEL	NET PROFIT	NB TRADES	MAX DD	RET/DD	R EXP	MAX CONSEC. LOSSES
Original	\$813,760	2180	\$59,120	13.76	0.23 R	12
50	\$815,362	2071	\$42,675	19.11	0.23 R	10
60	\$807,496	2071	\$45,110	17.90	0.23 R	11
70	\$798,834	2071	\$47,985	16.65	0.23 R	11
80	\$788,810	2071	\$51,902	15.20	0.23 R	12
90	\$775,314	2071	\$58,440	13.27	0.22 R	13
92	\$771,548	2071	\$60,440	12.77	0.22 R	13
95	\$763,053	2071	\$64,136	11.90	0.22 R	14
97	\$755,214	2071	\$68,582	11.01	0.22 R	15
98	\$749,395	2071	\$71,925	10.42	0.21 R	15
99	\$740,886	2071	\$77,692	9.54	0.21 R	16
100	\$683,890	2071	\$113,815	6.01	0.20 R	24

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Live equity curve from January 2024

29 Jan 2024 · 28 Aug 2026 · 2,180 trades · 2.6 years · base capital \$500,000

NOTICE

Performance expressed on one standard futures contract per market traded. Percentage figures use a \$500,000 fixed notional capital (arithmetic cumulative %, no compounding). In % view, DBMF and S&P 500 (SPY) are scaled to match Tirmann realized volatility for an indicative like-for-like risk comparison. This scaling is not a standardized or tradeable allocation. Absolute results remain available in USD. Past performance is not indicative of future results.

KEY PERCENTAGE INDICATORS

TOTAL RETURN (NET) 162.8% base \$500,000	AVG ANNUAL RET. 63.1% 2.6 years	SHARPE RATIO 3.07 Sortino: 6.80	MAX DRAWDOWN 10.9% trade-level peak-to-trough	VOLATILITY ANN. 19.8% annualised daily vol
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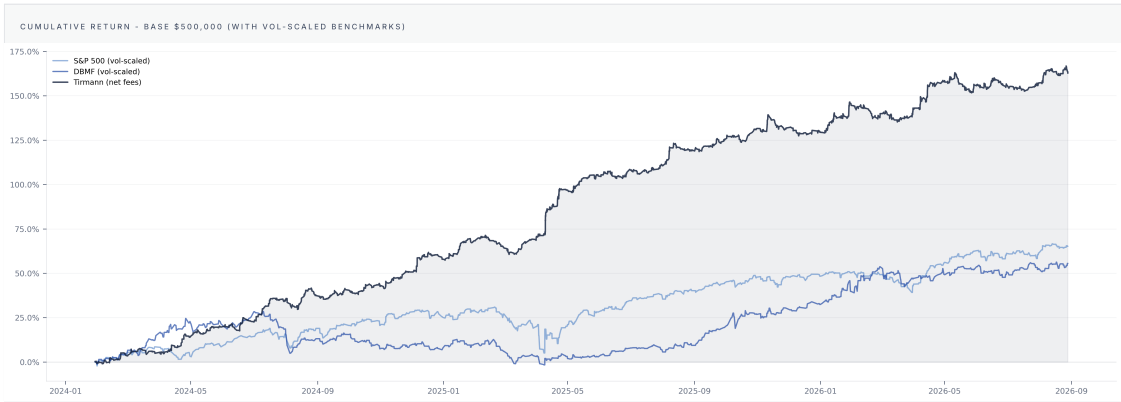
PERCENTAGE METRICS - BASE \$500,000

RETURNS - BASE \$500,000	
Total Return (net)	162.75%
Total Return (gross)	171.47%
Transaction Fees	-\$43,600
Avg Annual Return	63.11%
Volatility (ann.)	19.82%
Sharpe Ratio	3.07
Sortino Ratio	6.80
Calmar Ratio	5.79
DRAWDOWN	
Max Drawdown %	10.90%
Ulcer Index	0.0415
% Time in Drawdown	96.3%
VaR 95%	-1.25%
CVaR 95%	-1.77%
PERIODIC RETURNS	
Best Month	26.11%
Worst Month	-4.63%
Positive Months	81.2%
Best Year	71.48%
Worst Year	33.31%
Win Rate	43.58%

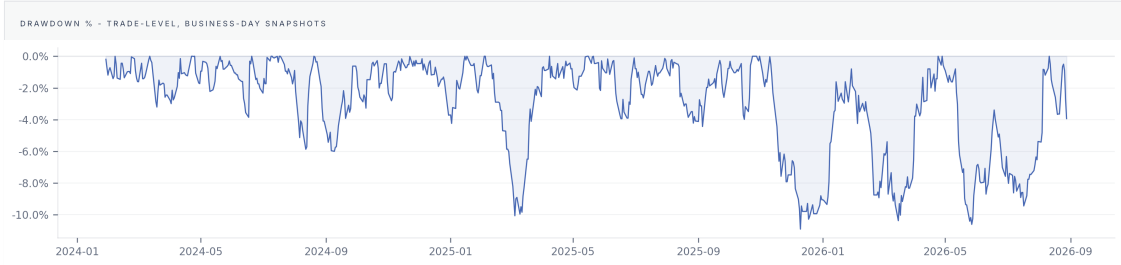
BENCHMARK COMPARISON

BENCHMARK COMPARISON (VOL-SCALED TO STRATEGY)	
Strategy vol (ann.)	19.82%
Strategy return (net)	+162.75%
Strategy max DD	10.90%
DBMF return (scaled)	+55.60%
DBMF max DD (scaled)	-23.44%
SPY return (scaled)	+65.23%
SPY max DD (scaled)	-19.73%

CUMULATIVE RETURN (%)



DRAWDOWN (%)



MONTHLY RETURNS (%)

MONTHLY RETURNS HEATMAP - BASE \$500,000													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2024	-0.69%	4.46%	1.75%	9.22%	5.96%	3.34%	12.71%	2.54%	3.64%	2.05%	8.37%	7.44%	60.79%
2025	10.79%	-4.01%	6.70%	26.62%	8.28%	3.85%	2.90%	8.69%	6.14%	6.39%	0.58%	-2.20%	74.72%
2026	15.56%	-4.35%	3.45%	15.09%	-1.39%	0.31%	1.45%	5.84%					35.95%

Dynamic rotation and regime
governance.

THE NECESSITY OF REGIME ALIGNMENT

The core challenge in systematic trading is not finding an edge, but managing its inevitable decay. Most quantitative failures occur when a static portfolio remains exposed to a market regime that has fundamentally shifted.

Tirmann's architecture is built on the premise that alpha is a perishable asset. Rather than assuming market conditions will remain static, the framework deploys a dynamic rotation engine that continuously realigns the active strategy pool to the prevailing volatility regime.

ROTATION ENGINE MECHANICS

Unlike traditional "Buy and Hold" algorithmic portfolios, our engine systematically filters the strategy universe based on real-time performance integrity:

Regime detection

Continuous monitoring of market microstructure to identify shifts (e.g., from low-volatility trend to high-volatility mean reversion).

Model health audit

Every active strategy is benchmarked against its historical statistical profile. If a model exhibits "Regime Drift" or structural decay, it is automatically returned to the reserve.

Alpha replacement

The system selects replacement candidates from the 150+ validated models that show the highest mathematical alignment with the new market environment.

DYNAMIC ROTATION AND RISK GOVERNANCE

Structural synergy

Pairing orthogonal logics (Trend vs. Mean Reversion) to offset individual drawdowns.

Volatility protection

Dynamic weighting to maintain a stable risk profile, regardless of market noise.

Microstructure integrity

Immediate removal of any model deviating from its original research thesis.

Static holding vs. Active rotation

OOS from 2024-01-01 · 105 strategies

AVERAGE DRAWDOWN REDUCTION

+37.5%

Close to close per model average

AVERAGE P&L CAPTURE

43.5%

Average P&L retained across all models

OVERVIEW

Portfolio equity & underwater curve · OOS

UNFILTERED MAX DD

550,338 \$

Peak: 4,523,495 \$ · Trough: 3,973,158 \$
Recovery Factor: 7.23x

FILTERED 1M+5M MAX DD

209,228 \$

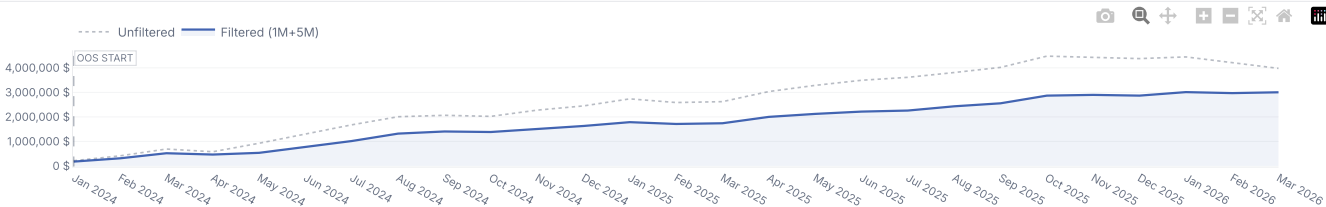
Peak: 1,454,972 \$ · Trough: 1,245,745 \$
Recovery Factor: 14.36x

SAVINGS

+341,110 \$

62.0% max DD reduction
Trade-by-trade · consolidated portfolio

CUMULATIVE P&L (USD)



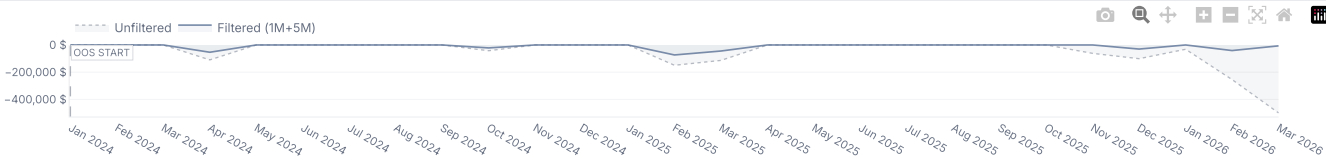
PORTFOLIO ANATOMY

All dimensions · consolidated portfolio (OOS)

METRIC	UNFILTERED	FILTERED 1M+5M	DELTA
Episodes	4	5	+1.0
Frequency / year	1.8	2.2	+0.4
Max DD (\$)	499,275 \$	73,445 \$	-85.3%
Avg DD (\$)	200,246 \$	43,984 \$	-78.0%
Max Duration	5m	3m	-2.0
Avg Duration	3.0m	2.2m	-0.8
Max Recovery	2m	2m	+0.0
Avg Recovery	1.3m	1.2m	-0.1
Time in DD	44.4%	40.7%	-8.3%
Recovery Factor	7.97	40.89	+413.0%
Pain Index	3.844	1.498	-61.0%

UNDERWATER

DRAWDOWN



The roadmap to your tailored infrastructure.

1

Consultation and proof of concept.

This step lays the foundation for a licence configuration truly aligned with your setup and objectives.

2

Licence configuration and review.

Your seats are configured around your margin capacity, followed by a full system review and Q&A session.

3

Documentation and delivery.

You receive an initial Blueprint report detailing historical backtests and risk metrics, which is systematically re-issued at every monthly rotation.

4

Deployment and activation review.

Technical documentation is provided for platform configuration. Deployment decisions and activation remain entirely under client control.

5

Algorithm monitoring and rotation.

Underperforming models are systematically rotated out per our quantitative protocol, accompanied by an updated Blueprint report for continuous compliance.

Proof of concept and deployment timeline.



	OBJECTIVE
DUE DILIGENCE AND ALIGNMENT	
Quantitative assessment conducted via public benchmarks or anonymized daily returns under NDA. We compute correlation metrics and deliver a concise impact report, providing clear visibility on expected decorrelation and drawdown impact prior to deployment.	<i>Evaluate mathematical synergy and decorrelation profile against your existing allocation or benchmark prior to infrastructure setup.</i>
	DELIVERABLE
	<i>A concise impact report (correlation metrics, combined drawdown profile, and risk-adjusted return simulation).</i>
LIVE PHASE & IT CONFIGURATION	
Simultaneous infrastructure setup and live validation window. You observe execution quality, latency, and strategy rotation in real-time under live market conditions on a dedicated account, with zero commercial commitment required.	<i>Validate execution infrastructure, slippage, and real-time model rotation under live market conditions.</i>
	DELIVERABLE
	<i>30 days of auditable live execution logs, strategy rotation updates, and system health reports.</i>
LICENCE ACTIVATION	
Once execution integrity and performance metrics are verified, the commercial licence is activated. Allocation, strategy slots, and rotation schedules are fully scaled with zero downtime or re-integration delays.	<i>Transition seamlessly to a long-term production deployment with fully scaled strategy allocation.</i>
	DELIVERABLE
	<i>Signed licence agreement, production configuration setup, and initial Blueprint report for active deployment.</i>

Structural edge and over-fit prevention.

MULTI-LAYER VALIDATION GATE

Models must pass sequential tests: historical dislocations, walk-forward stability, and out-of-sample validation. Failure at any independent layer triggers immediate, non-discretionary decommissioning.

PARAMETER PARSIMONY AS A ROBUSTNESS CRITERION

Deliberately simple algorithms capture genuine structural anomalies instead of over-fitted data. Minimizing parameters ensures logic transferability, serving as a direct proxy for out-of-sample robustness.

SELECTIVE OPTIMISATION, NOT SYSTEMATIC OPTIMISATION

Microstructure-driven filters exclude environment-mismatched trades. Optimisation is exclusively a final refinement layer applied to models with an already proven, standalone edge.

Strategic efficiency, agility and resource allocation.

Capital efficiency

Licensing Tirmann replaces fixed overhead with a predictable software expense. It grants instant access to 150+ rotated models with zero profit-sharing, retaining 100% of your alpha.

Operational leverage

Internal quantitative infrastructure demands heavy fixed capital and specialized engineering teams exposed to key-person risk; licensing Tirmann eliminates these structural constraints.

DOES TIRMANN MANAGE EXTERNAL CAPITAL?

No. Tirmann operates strictly as a technology and intellectual property developer. We do not provide financial advisory, custodial services, or asset management. All capital execution, operational integration, and final risk parameters remain under the sole governance of the Tirmann licensee.

WHY LICENSE AN EXTERNAL FRAMEWORK INSTEAD OF BUILDING IN-HOUSE?

Building and maintaining an institutional-grade quantitative infrastructure requires heavy fixed capital, continuous alternative data-feed overheads, and specialized engineering teams exposed to key-person risk. Licensing Tirmann replaces unpredictable fixed overhead with a transparent, predictable software expense, granting instant operational scale and access to a diversified pool of 150+ models continuously expanding while retaining 100% of your alpha with zero profit-sharing.

HOW DOES THE FRAMEWORK ENSURE NON-CORRELATED ALPHA?

Portfolio diversification fails when internal research teams rely on identical data structures and factors. Tirmann's models are built completely independent of traditional internal multi-factor frameworks. By combining microstructural price action on deep-liquidity global futures with automated macro nowcasting, our framework captures distinct, non-correlated market edge that complement and diversify existing institutional portfolios.

WHAT EXACTLY IS INCLUDED IN A TIRMANN LICENSE?

Each annual license includes full system deployment, monthly strategy rotation updates, standard monitoring, complete technical documentation and a dedicated technical service. Every deployment is accompanied by an initial Blueprint report detailing historical metrics and stress tests, which is systematically re-issued at every rotation for continuous risk compliance.

DO YOU CHARGE PERFORMANCE FEES OR TRADE UNDER A PROFIT-SHARING MODEL?

No. Tirmann operates strictly under a transparent, seat-based annual licensing structure with a clean tech-vendor model. We enforce zero profit-sharing, no discretionary control over your setup, and no capital lock-ins. This structure ensures our licensees retain 100% of their generated alpha while converting unpredictable operational infrastructure costs into a predictable software expense.

WHAT DOES TIRMANN'S INFRASTRUCTURE AND DEPLOYMENT DELIVERY MODEL LOOK LIKE?

Tirmann operates strictly under a software delivery and architecture advisory model. We do not run, host, or execute live strategy sessions on our own servers for clients. All execution occurs within your own infrastructure.

Software Integration: Our algorithmic frameworks are delivered to run natively on industry-standard, battle-tested trading platforms and execution software widely trusted by institutional professionals. No black-box proprietary execution software is required.

Infrastructure & VPS Governance: Licensees retain full governance over their technical hosting. You are completely free to select your preferred Virtual Private Server (VPS) and data-feed providers.

Advisory & Architecture Support: To ensure maximum reliability and latency optimization, Tirmann provides pre-configured architectural blueprints and baseline recommendations for server specifications, processing power, and connectivity settings.

Zero Counterparty Routing: At no point do execution orders, strategy logic, or live data packets route through Tirmann's servers. The framework operates 100% sandboxed within your secure environment, connecting directly from your local setup to your designated broker.

HOW DOES THE AUTOMATED ROTATION ENGINE WORK?

Alpha is a perishable asset. Rather than deploying static code that inevitably degrades when market structures shift, our engine continuously benchmarks active strategies against their historical statistical profiles. If a model exhibits regime drift or microstructural decay, the system suspends it and deploys a qualified replacement strategy from our model reserve possessing the highest mathematical alignment with the current volatility cycle.

Alpha is perishable. Architecture is permanent.

Tirmann is an independent quantitative research and development framework specializing in systematic trading architecture. Built on the premise that market regimes are fundamentally fluid, the infrastructure shifts the focus from static algorithm deployment to dynamic lifecycle governance.

By integrating exhaustive statistical validation, cross-market structural diversification, and automated risk protocols, Tirmann provides a highly resilient technological foundation for deep-liquidity futures markets.

Universe

150+ validated algorithmic models

Markets

Global index and commodity futures

Execution

100% systematic and non-discretionary

Risk control

Hard-coded limits and dynamic regime rotation