PRODUCTION PORTFOLIO

EXTENDED PERFORMANCE REPORT

QGSI Trading Strategy - LONG Signals
ATR Trailing Stop (Period: 30, Multiplier: 5.0, Max Bars: 20)
Report Generated: 2026-01-15 17:09:40

Portfolio Configuration

Parameter	Value
Starting Capital	$1,000,000.00
Max Concurrent Positions	10
Position Sizing	10% of Current Equity
Signal Priority	First-Come-First-Served (ATR Tiebreaker)
Data Period	2025-06-02 to 2025-12-30
Total Trading Days	147

Performance Summary

Metric	Value
Final Equity	$1,465,042.14
Net Profit	$465,042.14
Total Return	46.74%
CAGR	93.85%
Sharpe Ratio	7.9198
Sortino Ratio	10.6889
Calmar Ratio	61.72
Max Drawdown	-1.52%
Volatility (ann.)	8.41%
Profit Factor (Daily)	4.0570

Risk-Adjusted Performance

Metric	Value
Smart Sharpe	5.9508
Smart Sortino	9.0049
Prob. Sharpe Ratio	100.00%

Omega Ratio	4.0570
Recovery Factor	30.74
Ulcer Index	0.0048
Serenity Index	40,174.93

Return Distribution

Metric	Value
Expected Daily	0.2644%
Expected Monthly	5.51%
Best Day	2.48%
Worst Day	-1.05%
Best Month	7.34%
Worst Month	2.66%
Skewness	0.7912
Kurtosis	2.2608

Drawdown Analysis

Metric	Value
Max Drawdown	-1.52%
Avg. Drawdown	-0.33%
Longest DD Days	16
Avg. Drawdown Days	1.8

Top 5 Worst Drawdowns

Rank	Drawdown	Days	Started	Recovered
1	-1.52%	15	2025-07-21	2025-08-05
2	-1.49%	21	2025-10-03	2025-10-24
3	-1.04%	7	2025-08-29	2025-09-05
4	-0.84%	1	2025-12-01	2025-12-02
5	-0.71%	6	2025-07-11	2025-07-17

Win/Loss Statistics

Metric	Value
Win Days %	49.76%
Win Month %	100.00%
Win Quarter %	100.00%
Avg. Up Month	5.51%
Avg. Down Month	0.00%
Payoff Ratio	1.5842
Gain/Pain Ratio	0.8585
CPC Index	4.6221
Tail Ratio	1.9041

Risk Metrics

Metric	Value
Daily Value-at-Risk	-0.5704%
Expected Shortfall (cVaR)	-0.7179%
Kelly Criterion	54.19%
Outlier Win Ratio	4.6255
Outlier Loss Ratio	0.0000

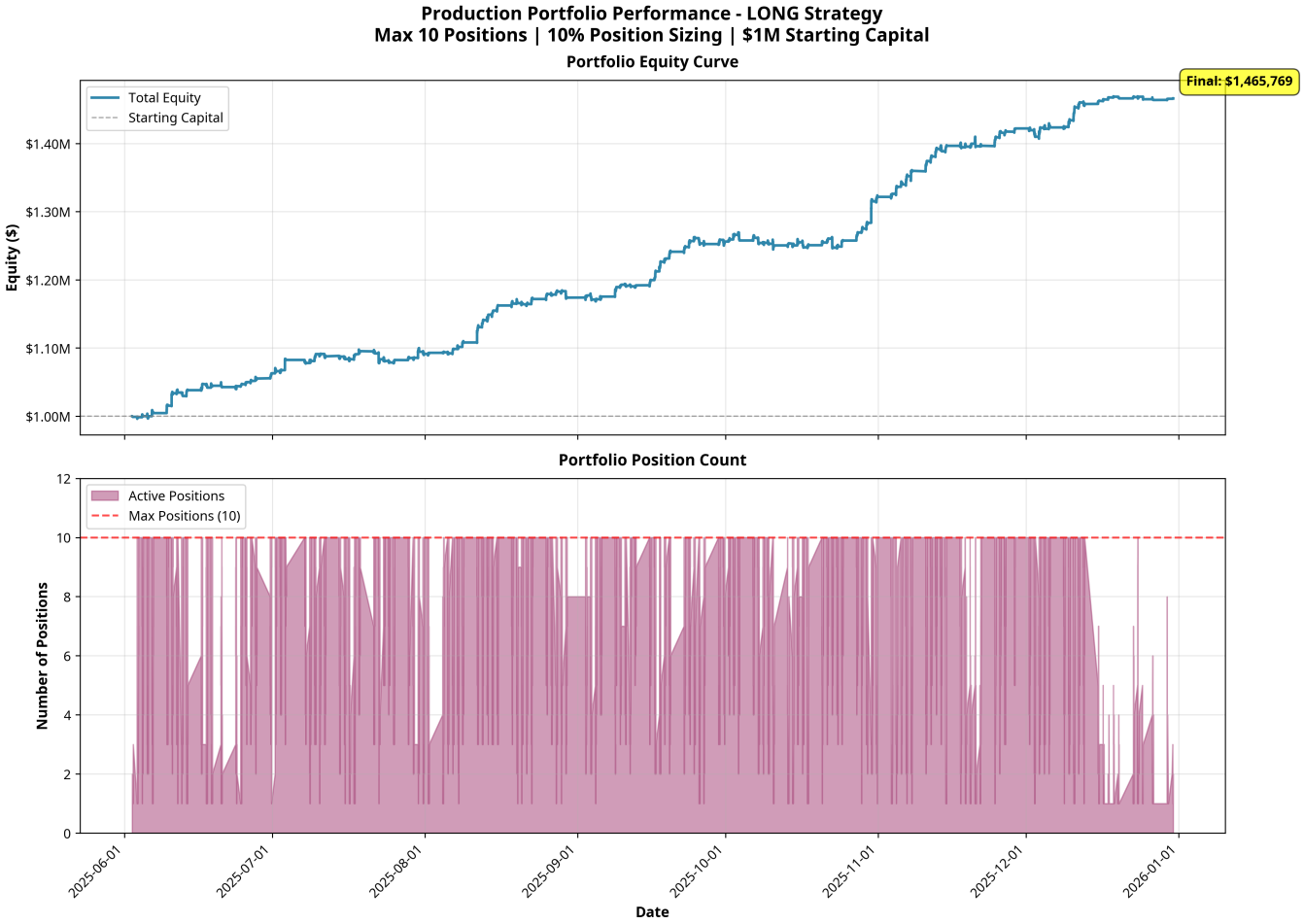
Monthly Performance Grid

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Year Total
2025	6.24%	2.66%	7.34%	6.81%	5.14%	7.34%	3.06%	38.60%

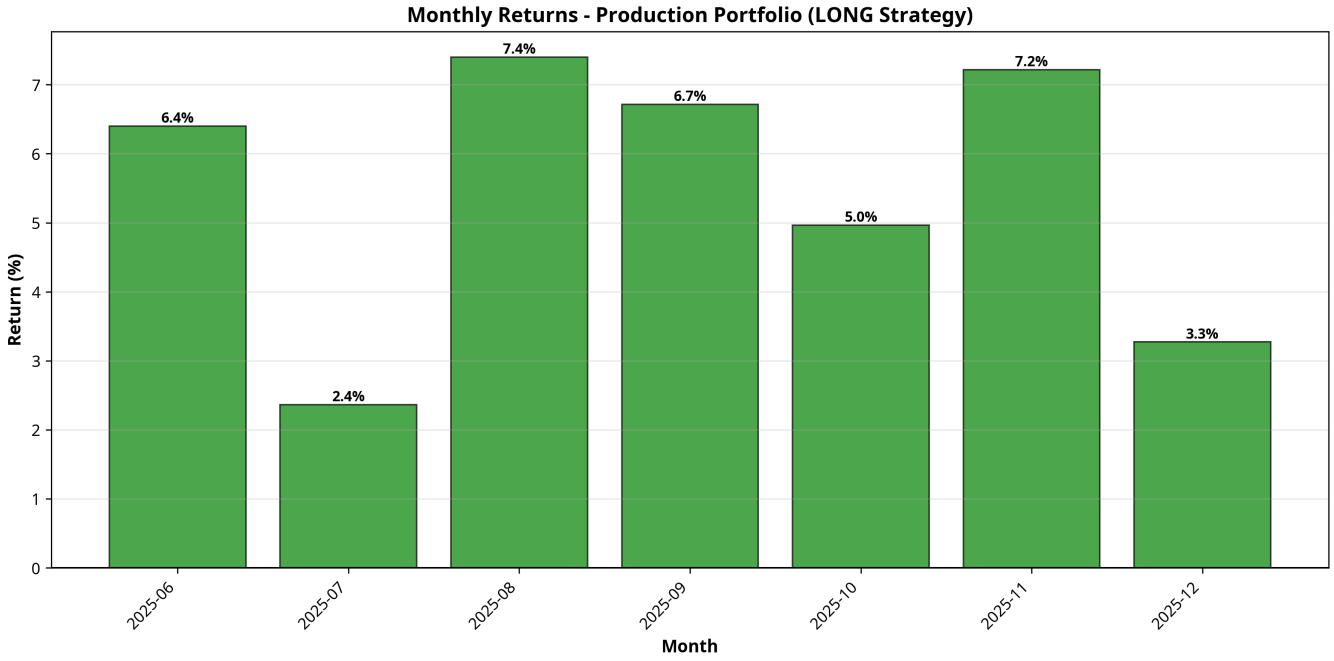
Trade Statistics

Metric	Value
Total Trades	16,754
Winning Trades	8,408 (50.2%)
Losing Trades	8,182 (49.8%)
Gross Profit	$2,248,214.67
Gross Loss	$1,783,172.54
Average Win	$267.39
Average Loss	$-217.94
Largest Win	$22,896.78
Largest Loss	$-12,000.99

Equity Curve



Monthly Returns



APPENDIX: FIFO Realistic Backtesting Methodology

Overview

This appendix documents the First-In-First-Out (FIFO) realistic backtesting process implemented to ensure the production portfolio simulator accurately replicates real-world fund performance. The methodology addresses critical challenges in portfolio-level backtesting that are often overlooked in traditional signal-level analysis.

The Challenge

Traditional backtesting systems evaluate trading signals in isolation, assuming unlimited capital, no position limits, perfect execution, and instantaneous position entry. This creates a significant gap between theoretical signal performance and actual fund performance. A production trading fund faces concrete limitations: fixed capital ($1M), position limits (max 10 concurrent), position sizing (10% of equity), signal competition, and execution sequencing.

FIFO Methodology

The FIFO methodology ensures that trade sequencing, position management, and capital allocation exactly mirror how a live fund would operate. All entry and exit signals are processed in strict chronological order based on timestamp, ensuring earlier signals are evaluated first with no future information influencing past decisions. The simulator maintains real-time portfolio state tracking current open positions, available capital, position count, and equity curve at every timestamp.

Key Constraints

When a new signal arrives, the simulator enforces: (1) Position limit check - if 10 positions are open, skip the signal; (2) Capital allocation - position size calculated dynamically as 10% of current equity, not starting capital; (3) Signal priority - when multiple signals occur simultaneously, priority determined by timestamp first, then ATR value (higher ATR = higher priority); (4) Exit processing - stops triggered immediately when price hits stop loss or maximum bars reached.

Baseline vs Production

Baseline (theoretical) assumed every signal is taken with unlimited capital, resulting in 31,823 trades. Production (realistic) applies real fund constraints with 10-position limit and 10% sizing, resulting in 16,754 trades (52.6% of signals). The remaining 15,069 signals (47.4%) were skipped due to max positions reached. This demonstrates that the 10-position limit is the dominant constraint, causing nearly half of all signals to be skipped.

Key Functions

process_baseline_to_production() - Main orchestrator converting baseline trades to production trades. check_position_availability() - Determines if new position can be opened. calculate_position_size() - Computes shares based on current equity. update_equity_curve() - Records equity at each timestamp. process_exits() - Checks all open positions for exit conditions. calculate_performance_metrics() - Computes comprehensive performance statistics including Sharpe, Sortino, drawdown, win rate, and profit factor.

Validation

The system ensures: (1) No look-ahead bias - all decisions use only information available at the time; (2) Capital conservation - total deployed capital never exceeds available equity; (3) Position integrity - no duplicate symbols, all exits matched to entries, PnL verified; (4) Equity curve continuity - continuous with no gaps, every trade impact recorded, drawdowns measured from running peak.

Conclusion

The FIFO realistic backtesting methodology transforms theoretical signal performance into achievable fund performance by enforcing real-world constraints, respecting temporal sequencing, simulating actual portfolio management, and eliminating look-ahead bias. This approach provides institutional-grade backtesting that accurately represents what a live trading fund would experience.