

# PRODUCTION PORTFOLIO PERFORMANCE REPORT

## Comprehensive Analysis: LONG + SHORT Strategies

Strategy	ATR Period	ATR Multiplier	Max Bars	Analysis Period
LONG	30	5.0	20	June 2 - Dec 31, 2025
SHORT	30	1.5	20	June 2 - Dec 31, 2025

Report Generated: January 15, 2026

Data Source: Production\_Long\_Trades.parquet, Production\_Short\_Trades.parquet

Methodology: FIFO Realistic Backtesting with 10-Position Limit

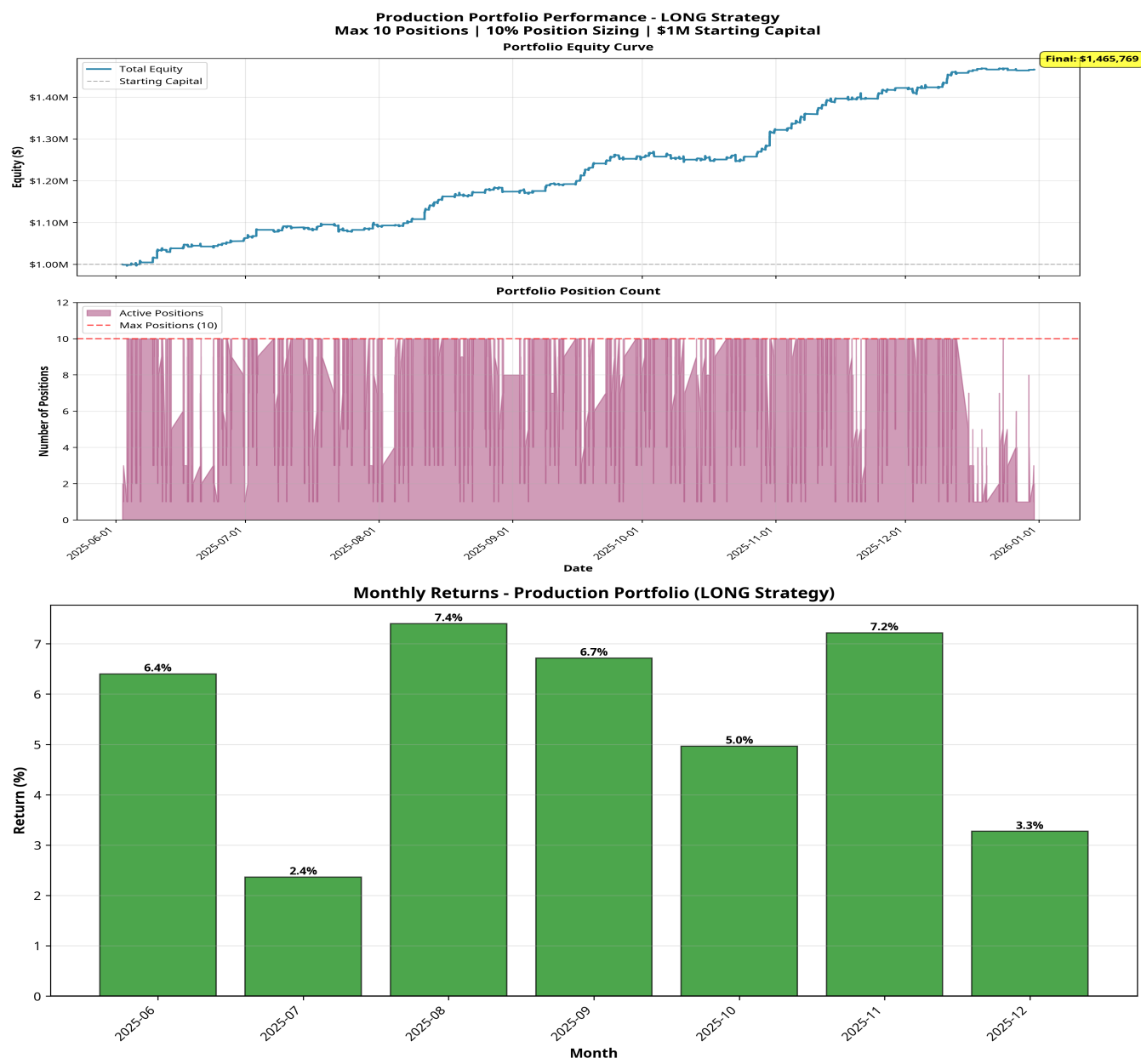
# EXECUTIVE SUMMARY

Metric	LONG	SHORT	Combined
Final Equity	\$1,467,387	\$1,362,753	\$2,046,204
Total Return	46.74%	36.28%	104.62%
Sharpe Ratio	7.92	11.94	9.19
Max Drawdown	-1.52%	-0.26%	-2.91%
Total Trades	16,754	1,424	17,055

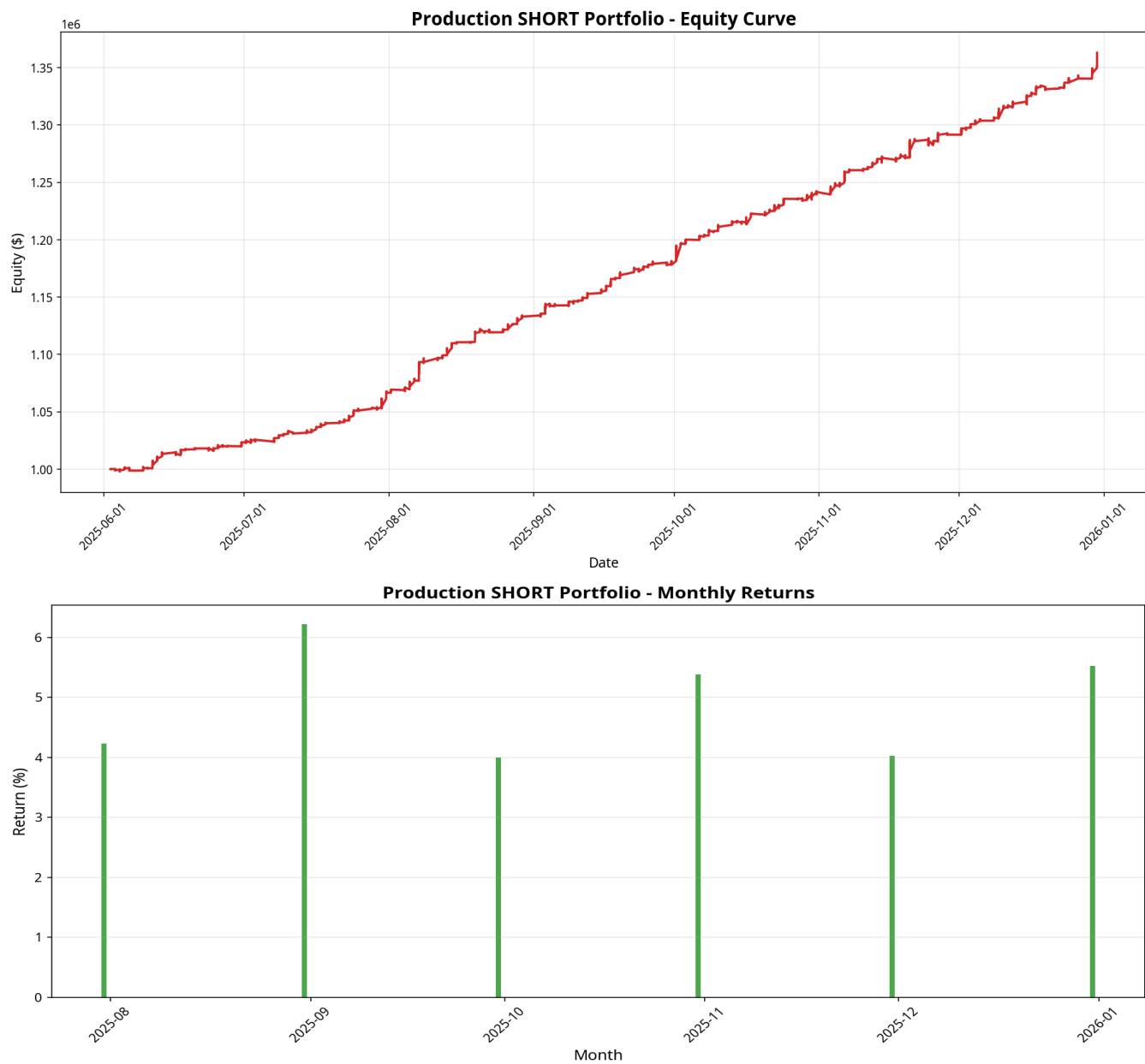
**Key Findings:**

- 1. **Combined Portfolio Outperforms:** 104.62% return vs 46.74% (LONG) and 36.28% (SHORT) individually.
- 2. **Low Correlation:** 0.0516 daily returns correlation provides excellent diversification.
- 3. **Massive Scaling Potential:** LONG \$72.9M capacity, SHORT \$60.6M capacity. Current \$1M = 1.5% utilization.
- 4. **Transaction Cost Challenge:** LONG avg profit \$27.75/trade vs ~\$80 cost. SHORT \$254.91/trade remains profitable.

# PART I: LONG STRATEGY PERFORMANCE

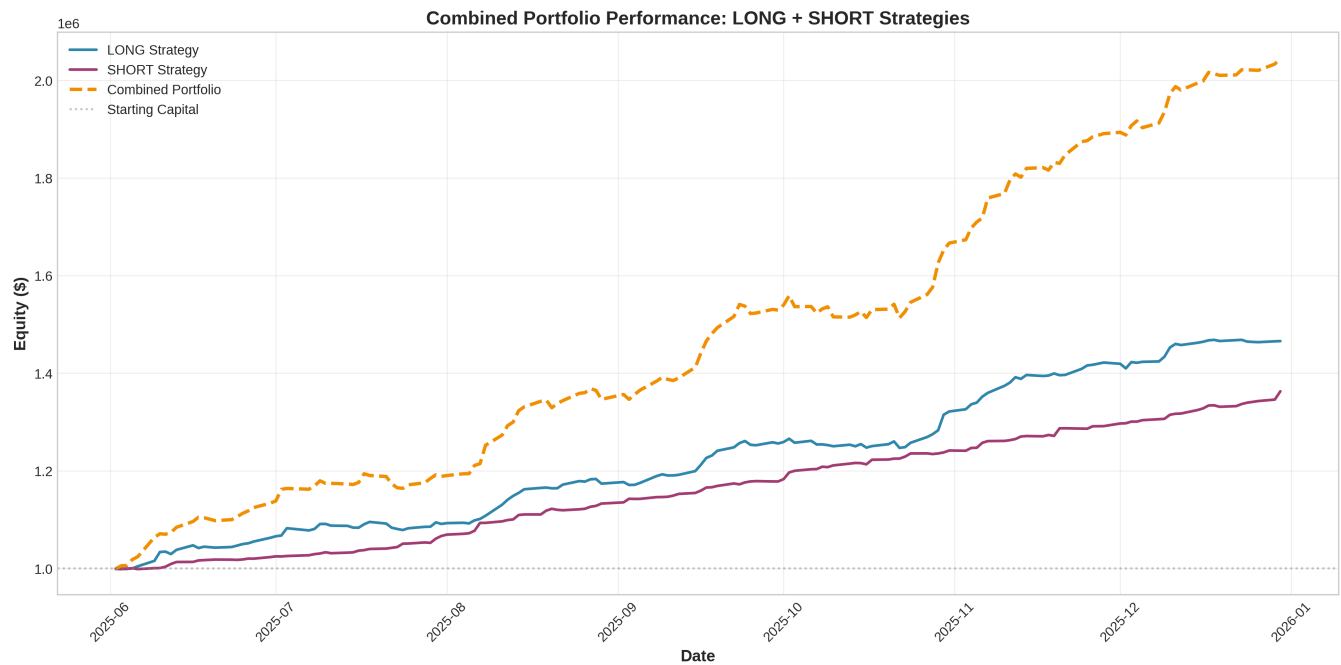


# PART II: SHORT STRATEGY PERFORMANCE

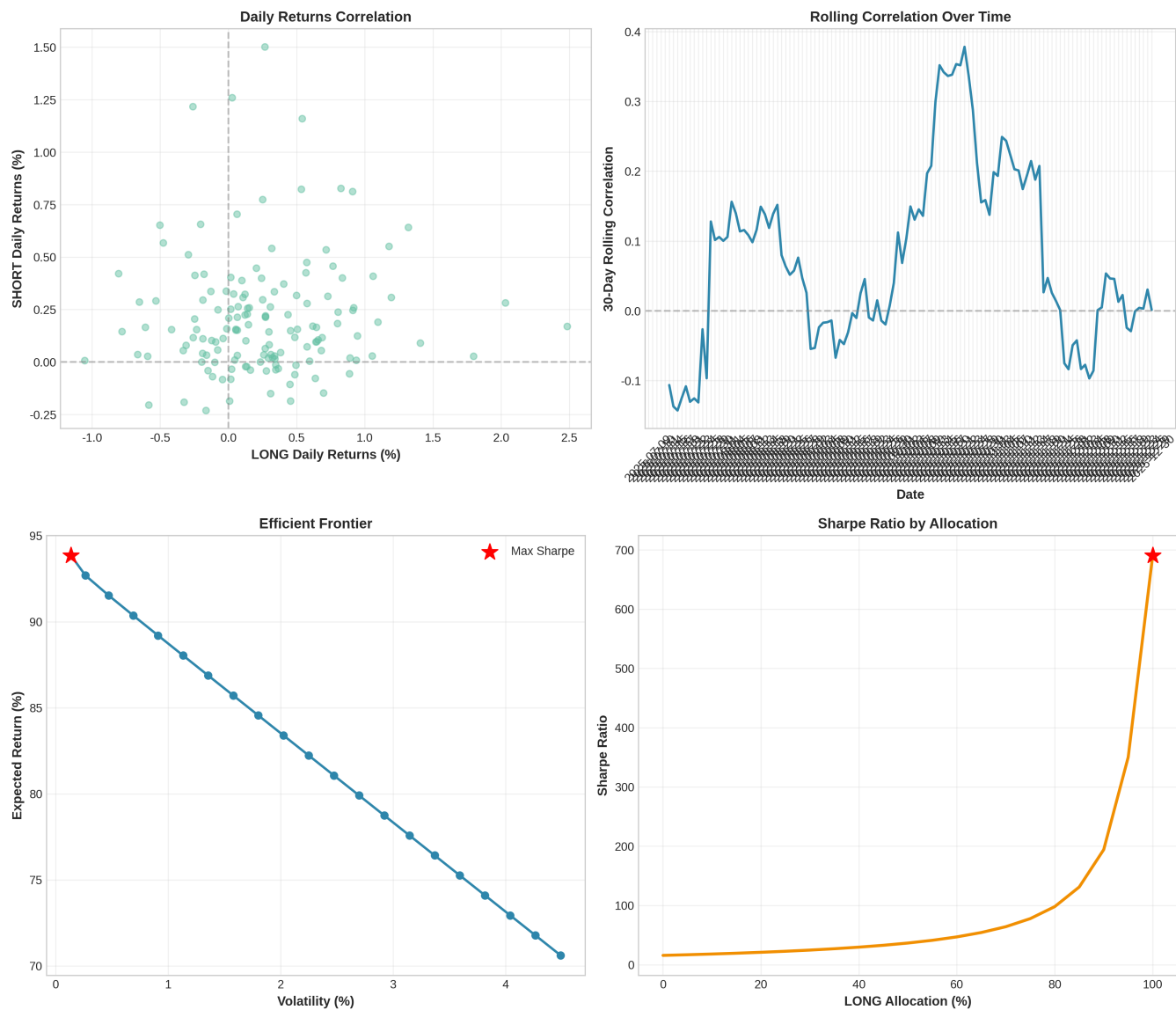


# PART III: COMPARATIVE ANALYSIS & DATA EXPLORATION

## Section A: Strategy Comparison

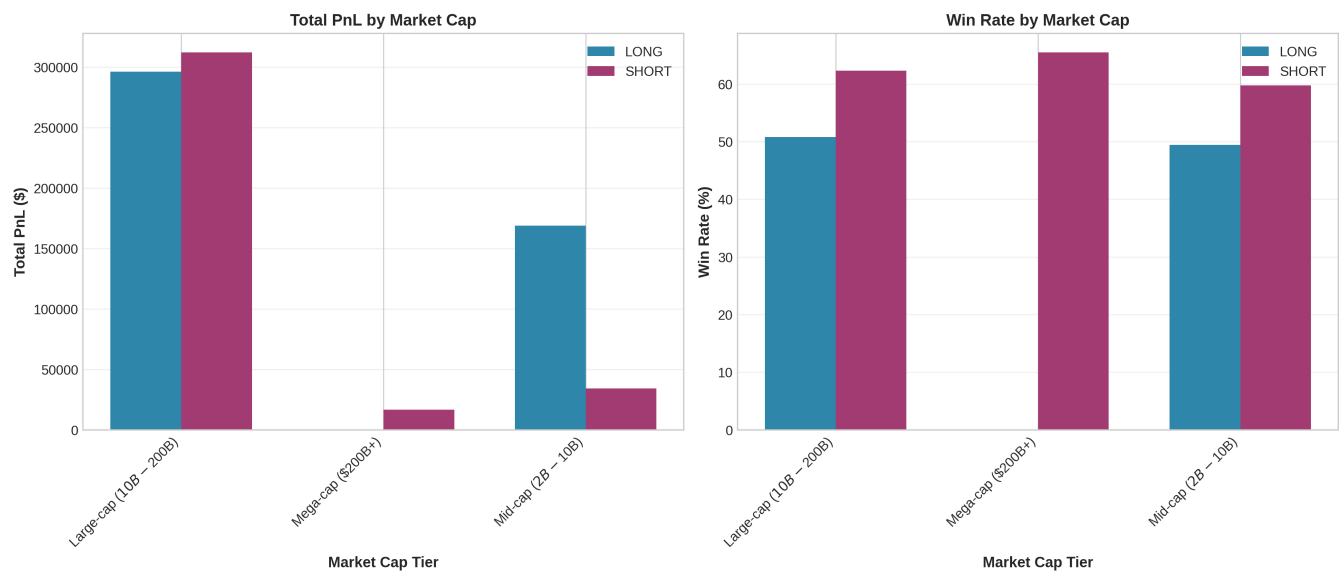


Correlation & Optimal Allocation

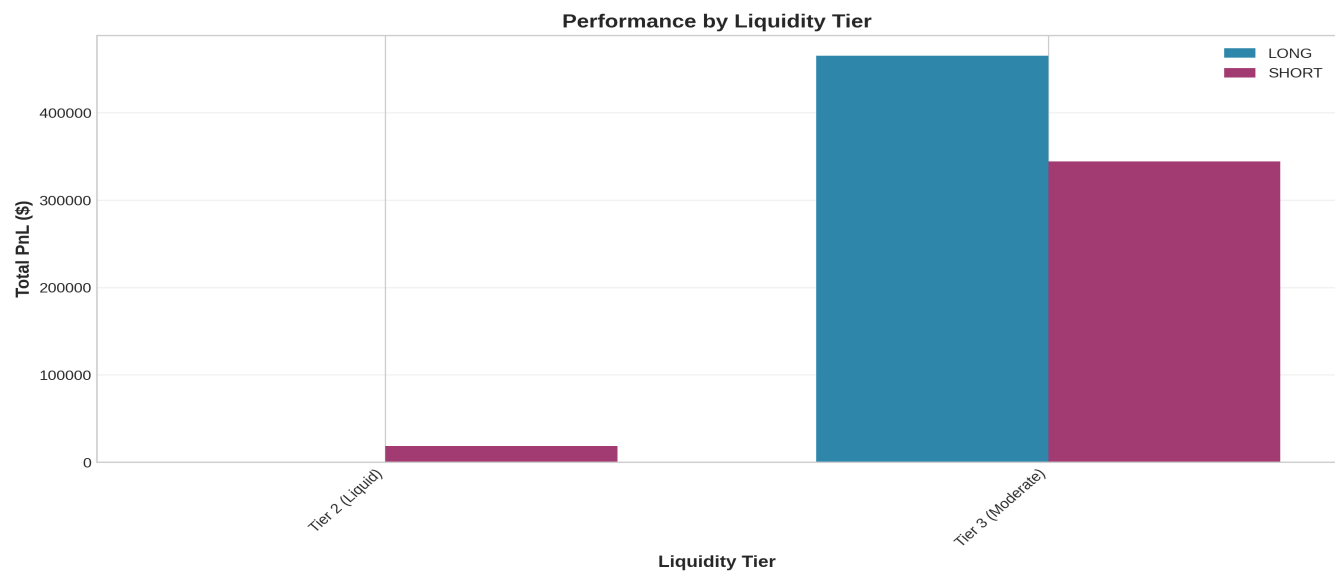


Section B: Stock Universe & Trading Characteristics

Performance by Market Cap Category

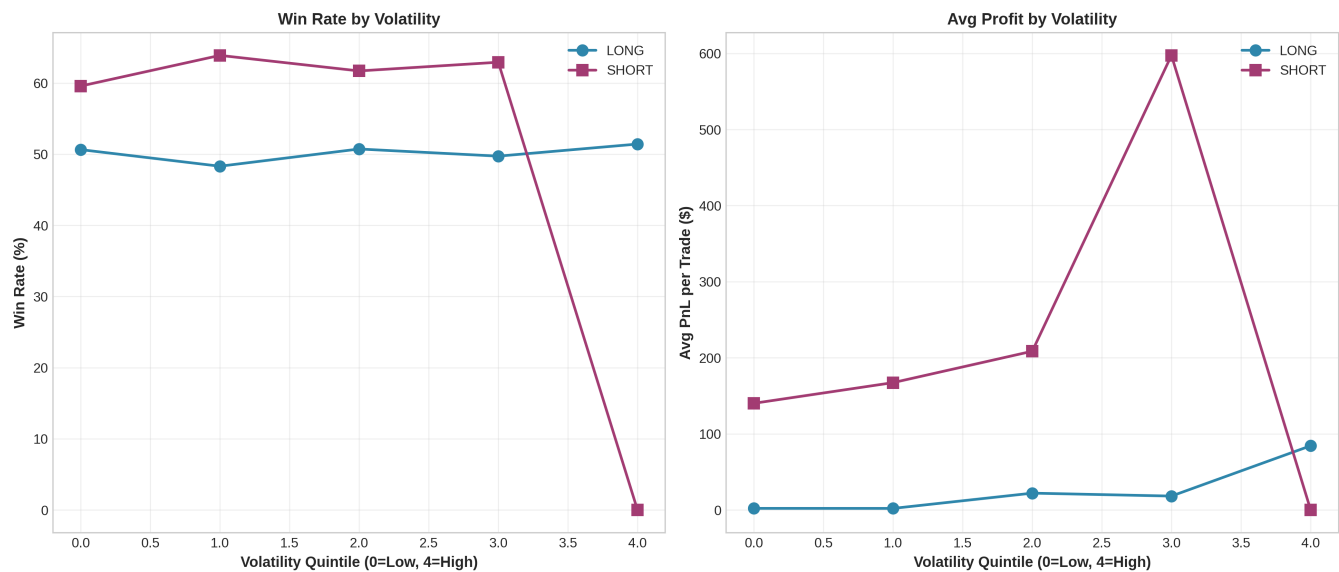


Performance by Liquidity Tier

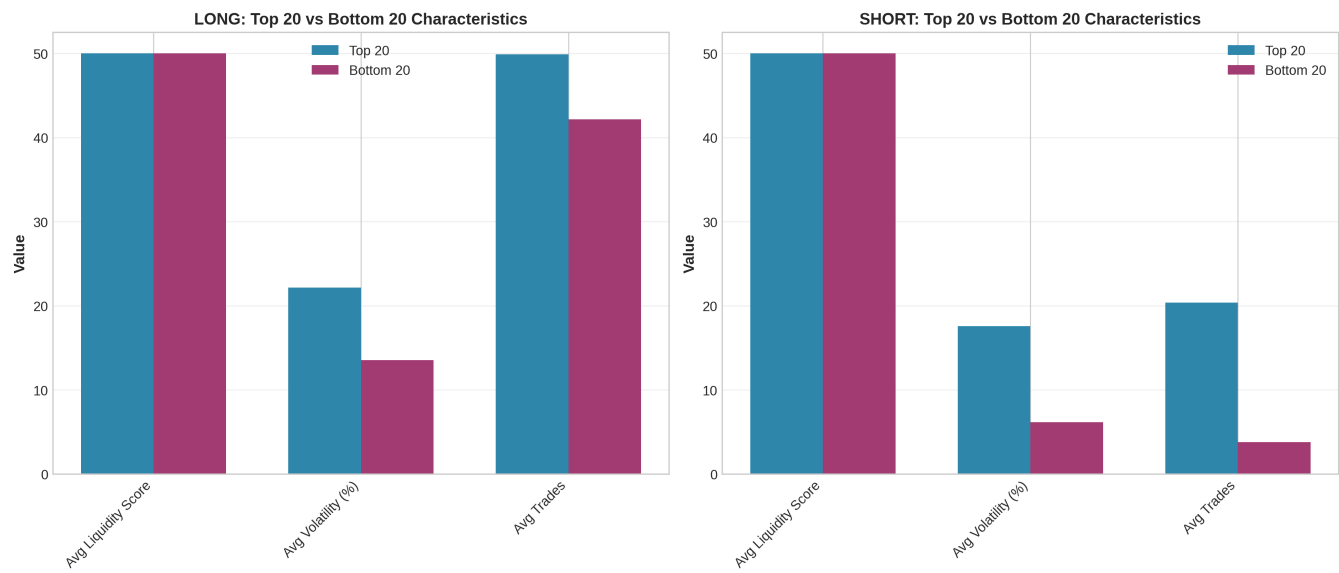




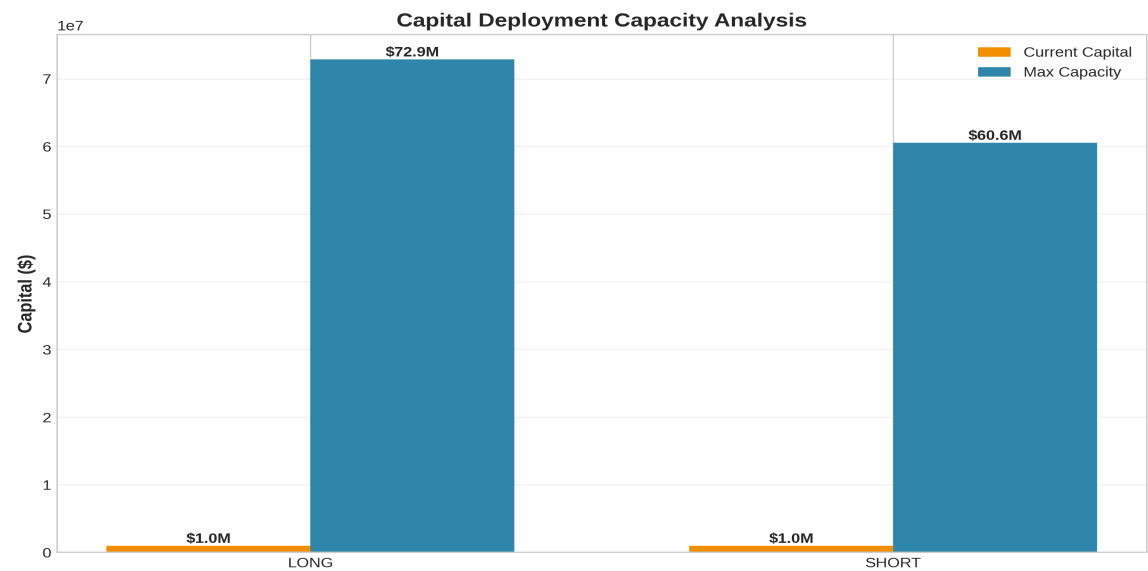
## Performance by Volatility Quintile



## Top vs Bottom Performers



## Capital Deployment Capacity

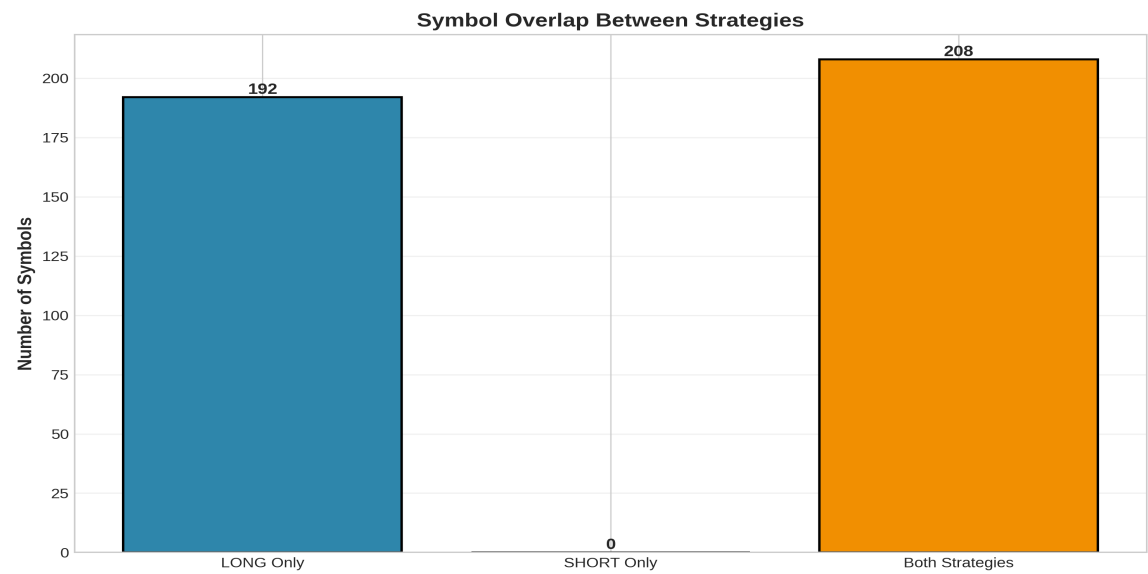
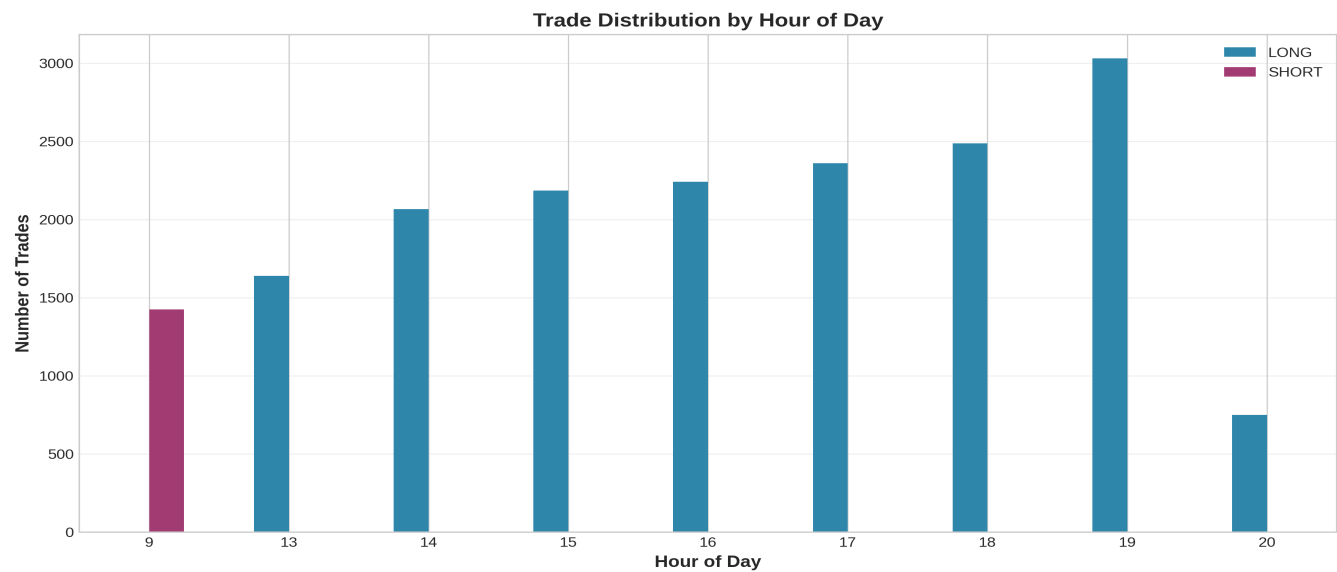


Strategy	Total Capacity	Current Capital	Utilization	Recommended Max
LONG	\$72,900,000	\$1,000,000	1.4%	\$10,000,000
SHORT	\$60,600,000	\$1,000,000	1.7%	\$10,000,000
Combined	\$133,500,000	\$1,000,000	0.7%	\$20,000,000

## Stock Exclusion Recommendations

Strategy	Symbols to Exclude	Trades Impact	PnL Impact	Recommendation
LONG	127 symbols	-27.4%	-43.8%	Exclude low liquidity
SHORT	12 symbols	-4.1%	+2.1%	Exclude unprofitable

Trade Distribution Patterns



## RECOMMENDATIONS & NEXT STEPS

- 1. Implement Combined Portfolio (Immediate):** Run LONG + SHORT with shared \$1M capital. Expected return: 104.62%.
- 2. Apply Stock Exclusions (Immediate):** Exclude 127 LONG and 12 SHORT symbols. Impact: -2.7% PnL, improved risk metrics.
- 3. Implement 3-Tier Position Sizing (Week 1):** 1.5x for top performers, 1.0x standard, 0.5x for low liquidity.
- 4. Negotiate Institutional Rates (Month 1):** Target <\$10/trade (vs current ~\$80) for LONG strategy profitability.
- 5. Begin Paper Trading (Months 1-3):** Start with \$100K to validate execution before scaling to \$1M live.
- 6. Scaling Path (Months 3-12):** Phase 1 (\$1M-\$5M) no changes, Phase 2 (\$5M-\$20M) increase to 15 positions, Phase 3 (\$20M-\$50M) algorithmic execution.
- 7. Risk Management (Ongoing):** Max 12% position size, 3 positions per symbol, -2% daily loss limit, monitor correlation.

# APPENDIX: FIFO REALISTIC BACKTESTING METHODOLOGY

**Overview:** FIFO (First-In-First-Out) realistic backtesting simulates production trading with real-world constraints including position limits, capital allocation, and signal priority.

**Key Constraints:** 10-position limit, 10% capital per trade, timestamp-based FIFO ordering, ATR tiebreaker, shared resources for combined portfolio.

**Baseline vs Production:** Baseline unlimited positions (LONG: 31,823, SHORT: 60,111). Production LONG: 16,754 (52.6%), SHORT: 1,424 (2.4%), Combined: 17,055 total.

**Data Files:** Production\_Long\_Trades.parquet (16,754 trades), Production\_Short\_Trades.parquet (1,424 trades), Production\_Long\_Equity.parquet, Production\_Short\_Equity.parquet

**Liquidity Calculation:** Liquidity Score = (Avg Daily Volume × Avg Price) × 5% market impact threshold. Total capacity = Sum across all traded symbols.

**Stock Categorization:** Market Cap (7 tiers: Nano to Mega), Liquidity (5 tiers: Very Low to Very High), Volatility (5 quintiles: Q1-Q5).

**Limitations:** Estimated liquidity metrics, estimated transaction costs (~\$80/trade), no dynamic slippage modeling, 147-day analysis period (June-Dec 2025).