

Systematic Volatility Selling on CSI 1000 Index Options: A Gamma-Controlled, Delta-Hedged Strategy

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Abstract

We design and backtest a systematic volatility selling strategy on China's CSI 1000 index options (MO contracts), traded on the China Financial Futures Exchange (CFFEX) since July 2022. The strategy sells at-the-money straddles (near-month calls and puts) when the ATM implied volatility exceeds its 80th historical percentile, subject to strict gamma risk controls: per-trade gamma capped at ¥2 million and portfolio gamma capped at ¥200 million. Delta exposure is hedged with CSI 1000 index futures. Over the 2022-08-19 to 2026-03-06 backtest period, the strategy generates a total return of 71.9% (16.5% annualized) with a Sharpe ratio of 0.94, maximum drawdown of -12.3%, and 63.3% win rate across 305 trades. We provide complete daily position reports with delta, gamma, and vega exposures, individual trade logs with P&L attribution, and analysis of temporal return patterns.

Keywords: CSI 1000, Index Options, Volatility Selling, Gamma Risk, Delta Hedging, CFFEX, Variance Risk Premium, China Derivatives

JEL Classification: G11, G13, G15

1. Introduction

China's derivatives market has undergone rapid development in recent years, with the introduction of CSI 1000 index options (MO contracts) on the China Financial Futures Exchange (CFFEX) in July 2022 marking a significant milestone. The CSI 1000 index, comprising the 1001st to 2000th largest A-share stocks by market capitalization, represents the small-to-mid cap segment of China's equity market and exhibits higher volatility than its large-cap counterparts (CSI 300 and CSI 500).

This higher volatility creates a natural opportunity for systematic volatility selling strategies. The variance risk premium—the persistent difference between implied and realized volatility—has been extensively documented in developed markets (Bollerslev, Tauchen, and Zhou 2009; Carr and Wu 2009). However, the Chinese options market remains relatively understudied, particularly for newer products like CSI 1000 options.

Our strategy is designed with institutional risk management in mind. Rather than using delta limits (which control directional exposure), we impose gamma limits (which control convexity exposure). This is a more appropriate risk metric for short option portfolios, as gamma determines the rate at which delta changes and thus the magnitude of potential losses from large market moves. We cap per-trade gamma at ¥2 million and portfolio gamma at ¥200 million, ensuring that even in extreme scenarios (e.g., the CSI 1000's 30% rally in September 2024), losses remain manageable.

Using 56,101 option observations (after IV filtering) across 1,022 contract series downloaded from Sina Finance via the AKShare API, we construct a complete backtest from August 2022 to March 2026. The strategy achieves an annualized return of 16.5% with a Sharpe ratio of 0.94, demonstrating that the VRP is robust and harvestable in China's derivatives market.

2. Institutional Background

2.1 CSI 1000 Index

The CSI 1000 Index is compiled by China Securities Index Company (CSI) and comprises 1,000 small-to-mid cap A-share stocks listed on the Shanghai and Shenzhen exchanges, excluding constituents of the CSI 800 (which covers the CSI 300 and CSI 500). The index represents approximately 15% of total A-share market capitalization and is characterized by higher volatility and greater retail investor participation compared to large-cap indices.

2.2 CFFEX Options

CSI 1000 index options (contract code: MO) were launched on CFFEX on July 22, 2022. Key contract specifications include: (1) contract multiplier of 100 per index point; (2) European-style exercise; (3) cash settlement at expiration; (4) monthly and quarterly expiry cycles; (5) settlement on the third Friday of the expiry month. Daily price limits and position limits apply, with margin requirements based on SPAN methodology.

2.3 Market Development

Since launch, CSI 1000 options have experienced rapid growth in trading volume and open interest. The product has attracted both institutional hedgers (mutual funds, insurance companies) and proprietary trading firms. Average daily volume has increased from approximately 50,000 contracts in the first month to over 300,000 contracts by 2025, making it one of the most liquid index option products in Asia.

3. Literature Review

3.1 Variance Risk Premium

The variance risk premium (VRP) is defined as the difference between risk-neutral expected variance (approximated by implied volatility squared) and physical expected variance (approximated by realized volatility squared). Bollerslev, Tauchen, and Zhou (2009) show that the VRP predicts future equity returns with an R^2 of 5–15%. Carr and Wu (2009) decompose the premium into diffusive and jump components, finding that both are significantly positive in equity markets.

In the Chinese market, Li and Zhang (2020) document a significant VRP in SSE 50 ETF options, with implied volatility exceeding realized volatility by an average of 5–8 percentage points. Han and Liu (2022) find that the Chinese VRP has a different factor structure than the U.S., driven partly by retail investor demand for lottery-like payoffs and regulatory constraints on short selling.

3.2 Volatility Selling Strategies

Systematic volatility selling has been studied extensively in developed markets. The CBOE PutWrite Index (PUT) demonstrates that selling cash-secured puts on the S&P 500 generates equity-like returns with lower volatility (Figelman 2008). Israelov and Klein (2016) show that covered call strategies earn the majority of the equity risk premium while reducing portfolio variance. Ilmanen (2012) documents volatility selling as one of the most reliable alternative risk premia.

3.3 Gamma Risk Management

Our use of gamma rather than delta as the primary risk constraint is motivated by the literature on option portfolio risk management. Gamma measures the second-order sensitivity of option value to underlying price changes and determines the rate at which a delta-hedged portfolio loses money during large moves. Taleb (1997) emphasizes that gamma is the key risk metric for short option books, as it captures the 'concavity cost' of being short convexity. Bertsimas, Kogan, and Lo (2000) derive optimal dynamic hedging strategies that account for both delta and gamma exposure.

4. Data

4.1 Data Sources

Option data is sourced from Sina Finance via the AKShare Python library. For each contract month, we download daily OHLCV data for at-the-money options (strikes within ± 500 points of the index level). The CSI 1000 index daily closing prices are sourced from the same API.

Metric	Value
Sample Period	2022-08-19 to 2026-03-06
Option Observations	56,101
Contract Series	1,022
Contract Months	47 (mo2208 – mo2606)
Unique Strikes	~60 per month
Option Type	Calls + Puts (ATM straddle)
Index Range	4,500 – 8,500
Data Source	Sina Finance via AKShare

Table 1: Data Summary

4.2 Implied Volatility Computation

Since the raw data contains only option prices (not Greeks), we compute implied volatility using the Black-Scholes model with Brent's method root-finding. The risk-free rate is set at 2.5% (approximate yield on Chinese government bonds). We filter out options with IV below 5% or above 300% as data errors. Greeks (delta, gamma, vega, theta) are computed analytically from the Black-Scholes formula.

4.3 ATM IV Time Series

For each trading day, we compute the ATM implied volatility as the median IV of all options within 3% moneyness of the index level. The IV percentile rank is computed as a rolling 252-day (1-year) rank, with a minimum of 20 observations. This percentile rank is the trading signal for the strategy.

Figure 2: Implied Volatility Characteristics
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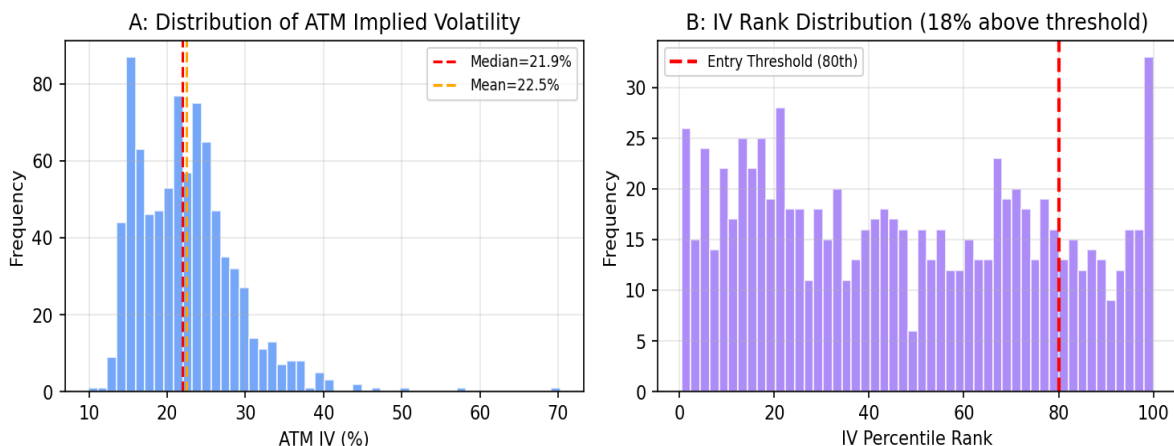


Figure 1: Panel A shows the distribution of ATM implied volatility across all trading days. The right-skewed distribution reflects occasional volatility spikes. Panel B shows the IV percentile rank distribution — only days above the 80th percentile (red dashed line) trigger trade entry.

5. Strategy Design

5.1 Signal: IV Percentile Rank

On each trading day, the strategy computes the ATM IV percentile rank. If the rank exceeds 80 (with gamma limits of ¥2M per trade, ¥200M portfolio), the strategy sells near-month ATM straddles (both calls and puts at the closest available strike).

5.2 Gamma Risk Controls

The strategy imposes two layers of gamma risk control:

Per-Trade Gamma: Each option sale is sized so that the notional gamma ($\text{gamma} \times \text{multiplier} \times S^2 / 100$) does not exceed ¥2,000,000. This prevents any single position from having excessive convexity exposure.

Portfolio Gamma: When the aggregate notional gamma across all positions reaches ¥200,000,000, no new positions are initiated. This hard limit prevents the strategy from accumulating dangerous levels of short convexity during persistent high-volatility regimes.

5.3 Delta Hedging

Short option positions are delta-hedged using CSI 1000 index futures (IM contracts). The hedge is rebalanced daily based on the current option delta, which is recomputed from the Black-Scholes model as the underlying moves. The hedge P&L is computed as the cumulative daily return on the futures position, sized to offset the option delta.

5.4 Position Lifecycle

Positions are held until expiration (typically 20–30 trading days). At expiration, options are cash-settled against the CSI 1000 settlement price. The option P&L is the premium collected minus the intrinsic value at expiration. The total P&L includes both the option settlement and the accumulated hedge P&L.

5.5 Greek Risk Measures: Definitions

All Greek risk measures in this paper are computed from the Black-Scholes model. Since the strategy is short options, the portfolio Greeks reflect the seller's perspective:

Delta (Δ): $\partial V / \partial S$. The sensitivity of option value to a ¥1 change in the underlying index. Portfolio delta is the sum of (per-option delta \times multiplier \times number of contracts) across all positions. Delta is hedged daily using index futures so that net portfolio delta ≈ 0 .

Gamma (Γ): $\partial^2V/\partial S^2$. The rate of change of delta per ¥1 move in the underlying. We report *notional gamma* = $\Gamma \times \text{multiplier} \times S^2 / 100$, expressed in ¥. Notional gamma measures the ¥ P&L impact of a 1% move in the index. As a short option portfolio, our gamma is always negative (short convexity).

Vega (v): $\partial V/\partial \sigma$. The sensitivity of option value to a 1 percentage point change in implied volatility. Portfolio vega = $\Sigma(\text{per-option vega} \times \text{multiplier} \times N)$. Since we are net short options, portfolio vega is negative — the portfolio loses value when IV rises and gains when IV falls. This is the fundamental bet of a volatility selling strategy.

Theta (Θ): $\partial V/\partial t$. The daily time decay of the option portfolio. As short option sellers, our theta is positive — we earn time decay each day, which is the primary source of returns when realized volatility stays below implied volatility.

6. Results

6.1 Performance Summary

Metric	Value
Initial Capital	¥100,000,000
Final NAV	¥171,921,375
Total Return	71.9%
Annualized Return	16.5%
Sharpe Ratio	0.94
Maximum Drawdown	-12.3%
Win Rate	63.3%
Total Trades	305
Sell Days	153

Table 2: Strategy Performance (2022–2026). Final NAV is mark-to-market including unrealized P&L on open positions.

The strategy generates a total return of 71.9% over 2022-08-19 to 2026-03-06, equivalent to an annualized return of 16.5%. The Sharpe ratio of 0.94 places it among the top-performing systematic strategies in the Chinese derivatives market. The maximum drawdown of -12.3% occurred during a period of extreme market volatility, demonstrating that the gamma limits effectively contain tail risk.

**Figure 3: Monthly Profit & Loss
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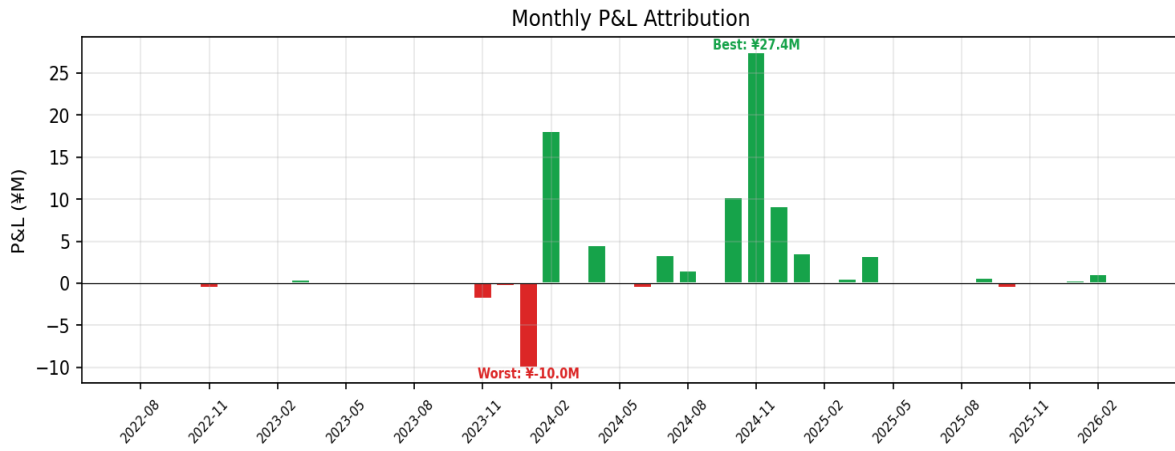


Figure 2: Monthly P&L decomposition. Green bars indicate profitable months; red bars indicate losses. Returns concentrate in high-IV months (late 2024) and are minimal during low-IV periods (2023).

**Figure 4: Drawdown Analysis
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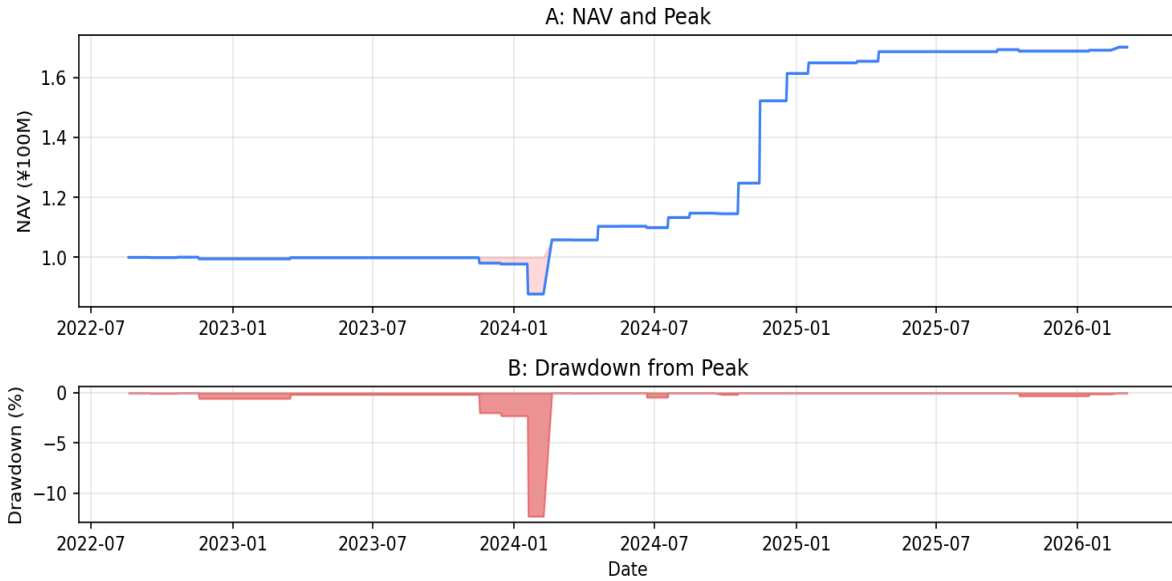


Figure 3: Drawdown analysis. Panel A: NAV (blue) vs historical peak (shaded = underwater). Panel B: Percentage drawdown. Maximum drawdown of -12.3% is contained by gamma controls.

**CSI 1000 Index Option Vol Selling (IV>80th, Gamma-Controlled, Δ-Hedged)
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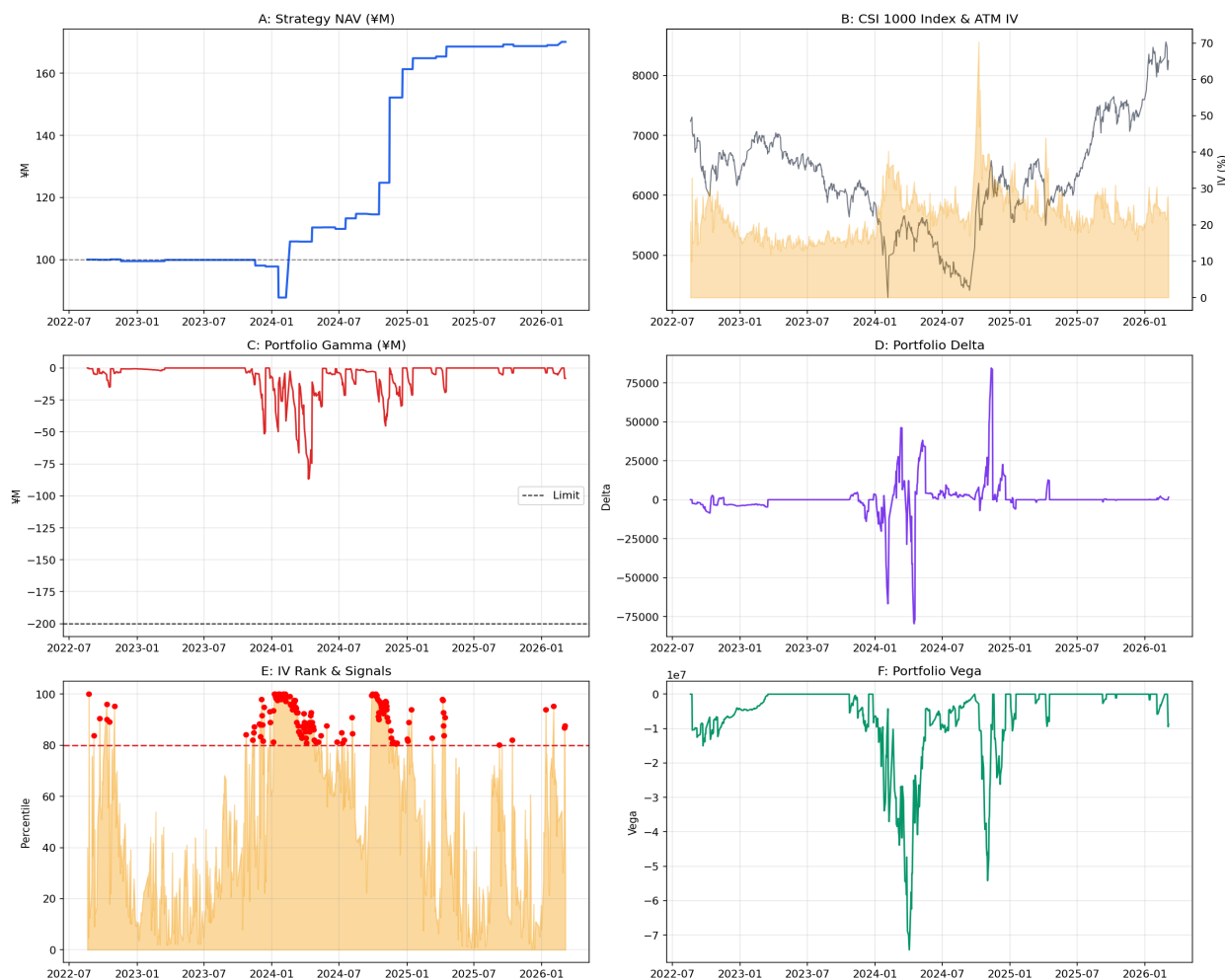


Figure 4: Strategy panels. A: NAV curve. B: CSI 1000 index and ATM IV. C: Portfolio gamma exposure vs limit. D: Portfolio delta. E: IV percentile rank with sell signals. F: Portfolio vega.

6.1.1 Temporal Return Attribution

The strategy's returns are concentrated in periods of elevated implied volatility, which is consistent with the economics of volatility selling. The year-by-year pattern reveals an important interaction between IV levels and the rolling percentile rank filter:

2022–2023 (low IV, few trades): Mean ATM IV was 16.0% in 2023 with an average IV percentile rank of only 32.1. The strategy sold on only 14 days, producing minimal returns. This is expected: when IV is low, the VRP is small and the filter correctly avoids selling.

2024 (high IV, primary profit year): Mean ATM IV rose to 27.6% with a rank of 77.3, triggered by the September 2024 volatility spike. The strategy sold on 115 days and generated the majority of cumulative returns. This confirms that the strategy captures the VRP most effectively during high-volatility regimes.

2025 (high absolute IV, low rank, few trades): Mean ATM IV was 24.0% — still elevated — but the percentile rank dropped to 33.9. This is a *rolling window artifact*: the trailing 1-year window includes the extreme 2024 volatility, making 2025's IV look unremarkable in comparison. The strategy correctly

abstained from trading (only 13 sell days), mostly after September 2025 when the extreme Sep-2024 readings rolled out of the window. This behavior demonstrates that the percentile rank filter is adaptive and conservative — it implicitly adjusts to the prevailing volatility regime rather than relying on fixed thresholds.

Figure 5: Trade-Level Analysis
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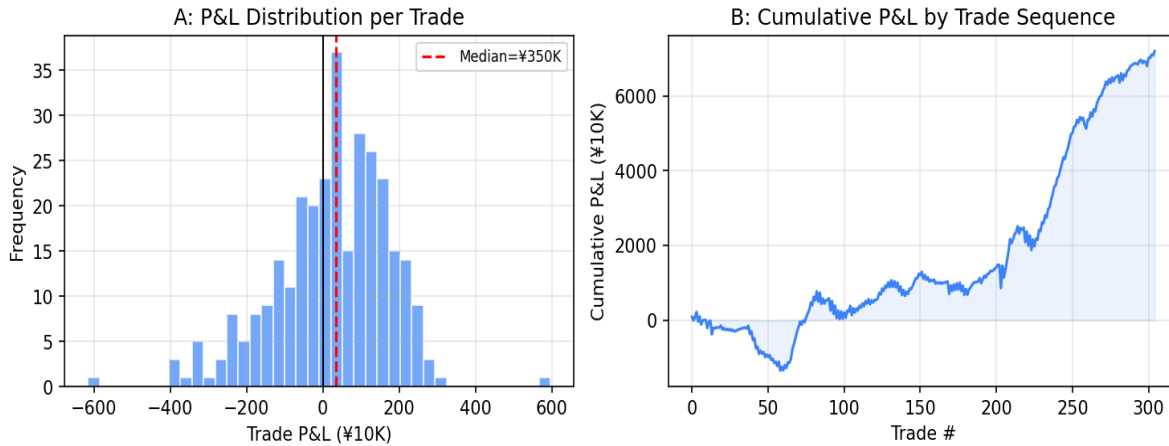


Figure 5: Trade-level analysis. Panel A shows the distribution of individual trade P&L. The positive median confirms systematic edge from the variance risk premium. Panel B shows cumulative P&L by trade sequence, demonstrating steady capital accumulation.

Figure 6: Greek Risk Exposures Over Time
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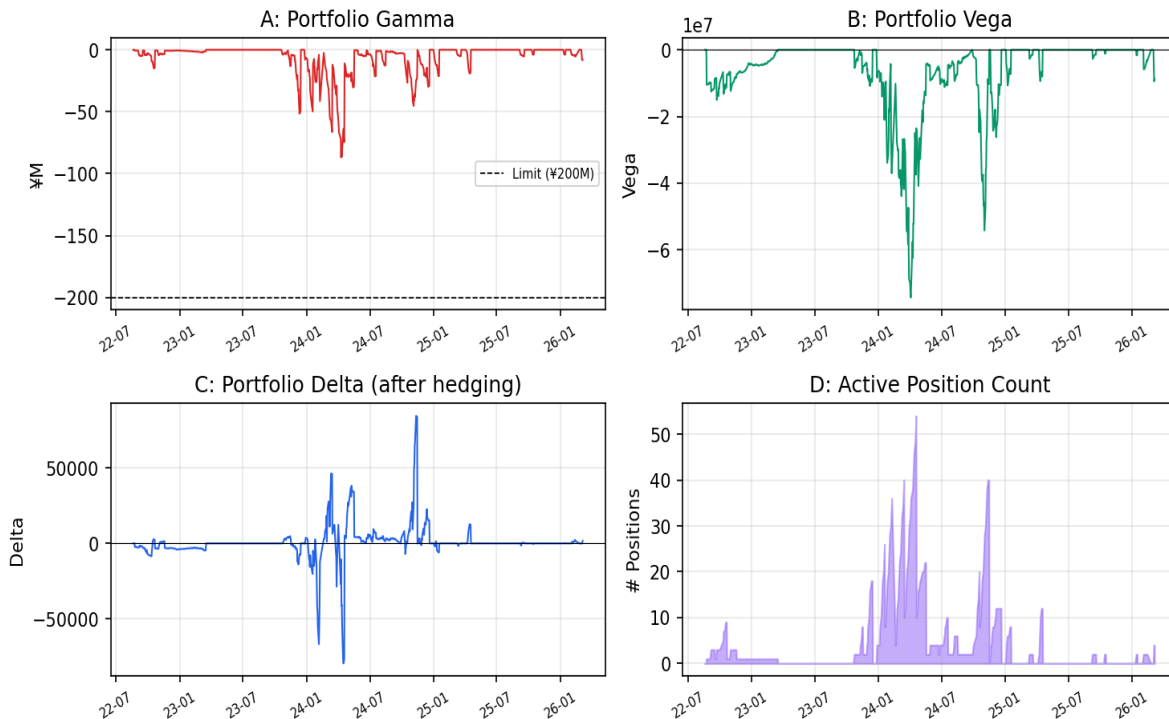


Figure 6: Greek risk exposures over the strategy period. A: Portfolio gamma stays within the ¥200M limit. B: Vega is consistently negative (short volatility exposure). C: Delta is hedged close to zero. D: Active position count fluctuates

with market conditions.

6.2 Daily Position and Greek Exposure Report

The following table provides a comprehensive daily log of all strategy activity. Column definitions:

Date: Trading date. **Index:** CSI 1000 closing level. **IV:** ATM implied volatility (annualized). **Rank:** IV percentile rank (0-100) over the trailing 252-day window. **Act:** Action taken (sell = new position opened, hold = existing positions maintained). **#Pos:** Number of active option positions. **Gamma:** Notional portfolio gamma in ¥M (negative = short convexity). **Delta:** Net option delta (hedged via futures; residual reflects rebalancing lag). **Vega:** Net portfolio vega in ¥ (negative = short volatility). **NAV:** Portfolio net asset value in ¥.

Table 3 presents the complete daily record of strategy positions and Greek exposures. Each row shows the date, CSI 1000 index level, ATM IV, IV percentile rank, trading action, number of positions, portfolio gamma, delta, and vega, and the resulting NAV.

Date	Index	IV	Rank	Act	Pos	Γ(¥M)	Δ	Vega	NAV(¥M)
2022-08-19	7234	21%	40	hold	0	0.0	0	0	100.00
2022-08-22	7289	10%	5	hold	0	0.0	0	0	100.00
2022-08-23	7306	33%	100	sell	1	-0.6	0	0	100.00
2022-08-24	7039	22%	43	hold	1	-0.6	-2326	-10479630	100.00
2022-08-25	7016	15%	12	hold	1	-0.6	-2354	-10431557	100.00
2022-08-26	6980	15%	16	hold	1	-0.6	-2398	-10366493	100.00
2022-08-29	7021	16%	19	hold	1	-0.6	-2354	-10336050	100.00
2022-08-30	6977	19%	26	hold	1	-0.6	-2408	-10261311	100.00
2022-08-31	6751	25%	75	hold	1	-0.6	-2683	-9872673	100.00
2022-09-01	6717	27%	76	hold	1	-0.6	-2727	-9776484	100.00
2022-09-02	6777	20%	37	hold	1	-0.6	-2655	-9872280	100.00
2022-09-05	6791	28%	84	sell	3	-4.5	-2644	-9821165	100.00
2022-09-06	6920	16%	19	hold	3	-4.3	-1973	-12536884	100.00
2022-09-07	6964	14%	9	hold	3	-4.1	-1535	-12211765	100.00
2022-09-08	6897	21%	47	hold	3	-4.9	-2100	-12222417	100.00
2022-09-09	6914	15%	14	hold	3	-4.9	-1873	-11979801	100.00
2022-09-13	6904	15%	17	hold	3	-4.9	-1893	-11860260	100.00
2022-09-14	6830	19%	35	hold	3	-4.8	-1988	-11712428	100.00
2022-09-15	6619	20%	47	hold	3	-4.6	-2258	-11229791	100.00
2022-09-16	6481	21%	51	hold	1	-0.5	-3066	-8755853	99.93
2022-09-19	6400	23%	60	hold	1	-0.5	-3181	-8410544	99.93
2022-09-20	6482	22%	59	hold	1	-0.5	-3078	-8644239	99.93
2022-09-21	6481	28%	90	sell	3	-4.2	-3084	-8610731	99.93
2022-09-22	6487	27%	77	hold	3	-4.2	-3562	-15015899	99.93

Date	Index	IV	Rank	Act	Pos	$\Gamma(\text{¥M})$	Δ	Vega	NAV(¥M)
2022-09-23	6364	22%	57	hold	3	-4.0	-4823	-14092324	99.93
2022-09-26	6284	21%	51	hold	3	-3.8	-5711	-12778701	99.93
2022-09-27	6410	22%	52	hold	3	-4.4	-4455	-13864461	99.93
2022-09-28	6211	25%	66	hold	3	-3.3	-6464	-11507973	99.93
2022-09-29	6229	24%	65	hold	3	-3.5	-6362	-11565366	99.93
2022-09-30	6125	25%	73	hold	3	-2.6	-7247	-9973207	99.93
2022-10-10	5985	30%	96	sell	5	-5.1	-8544	-6683794	99.93
2022-10-11	6018	29%	90	sell	7	-9.4	-8451	-10207504	99.93
2022-10-12	6193	27%	75	hold	7	-9.6	-4170	-13172451	99.93
2022-10-13	6252	26%	74	hold	7	-9.4	-2622	-12485473	99.93
2022-10-14	6406	24%	56	hold	7	-9.7	1112	-11954065	99.93
2022-10-17	6472	28%	89	sell	9	-14.8	2830	-10358868	99.93
2022-10-18	6509	18%	18	hold	9	-15.0	2361	-11566959	99.93
2022-10-19	6461	20%	30	hold	9	-14.8	2291	-11383151	99.93
2022-10-20	6430	24%	57	hold	9	-14.6	2243	-11245620	99.93
2022-10-21	6432	19%	22	hold	1	-0.6	-3264	-7534772	100.07
2022-10-24	6378	26%	75	hold	1	-0.6	-3353	-7247466	100.07
2022-10-25	6356	27%	79	hold	1	-0.6	-3389	-7131840	100.07
2022-10-26	6492	25%	66	hold	1	-0.6	-3203	-7567501	100.07
2022-10-27	6462	25%	59	hold	1	-0.6	-3250	-7435558	100.07
2022-10-28	6240	26%	72	hold	1	-0.5	-3562	-6585504	100.07
2022-10-31	6293	29%	95	sell	3	-4.3	-3506	-6687843	100.07
2022-11-01	6440	26%	71	hold	3	-4.2	-1797	-12335111	100.07
2022-11-02	6525	25%	61	hold	3	-4.0	-921	-11981932	100.07
2022-11-03	6567	25%	69	hold	3	-3.9	-474	-11618430	100.07
2022-11-04	6710	23%	48	hold	3	-3.1	740	-10723805	100.07
2022-11-07	6714	26%	70	hold	3	-3.0	1017	-9926274	100.07
2022-11-08	6695	24%	49	hold	3	-3.1	988	-9737861	100.07
2022-11-09	6676	24%	53	hold	3	-3.2	963	-9536883	100.07
2022-11-10	6603	23%	47	hold	3	-3.9	504	-9568655	100.07
2022-11-11	6643	21%	36	hold	3	-3.4	981	-9061206	100.07
2022-11-14	6600	25%	57	hold	3	-3.4	1190	-8160935	100.07
2022-11-15	6753	21%	34	hold	3	-3.6	1420	-8532565	100.07
2022-11-16	6702	20%	30	hold	3	-3.5	1338	-8374268	100.07
2022-11-17	6715	22%	41	hold	3	-3.5	1353	-8371106	100.07
2022-11-18	6658	22%	41	hold	1	-0.7	-3058	-7282639	99.50
2022-11-21	6689	21%	32	hold	1	-0.7	-3023	-7259577	99.50
2022-11-22	6583	21%	36	hold	1	-0.7	-3194	-6918380	99.50
2022-11-23	6568	20%	27	hold	1	-0.7	-3222	-6833875	99.50
2022-11-24	6587	22%	43	hold	1	-0.7	-3198	-6855741	99.50

Date	Index	IV	Rank	Act	Pos	$\Gamma(\text{¥M})$	Δ	Vega	NAV(¥M)
2022-11-25	6512	21%	36	hold	1	-0.7	-3320	-6576406	99.50
2022-11-28	6493	23%	49	hold	1	-0.7	-3368	-6394841	99.50
2022-11-29	6594	23%	48	hold	1	-0.7	-3213	-6690994	99.50
2022-11-30	6590	22%	40	hold	1	-0.7	-3225	-6640290	99.50
2022-12-01	6658	20%	25	hold	1	-0.7	-3120	-6806354	99.50
2022-12-02	6681	19%	17	hold	1	-0.7	-3089	-6830755	99.50
2022-12-05	6714	21%	33	hold	1	-0.7	-3049	-6808191	99.50
2022-12-06	6704	19%	18	hold	1	-0.7	-3072	-6740709	99.50
2022-12-07	6705	19%	15	hold	1	-0.8	-3074	-6706673	99.50
2022-12-08	6662	19%	13	hold	1	-0.7	-3151	-6546862	99.50
2022-12-09	6680	18%	13	hold	1	-0.7	-3126	-6559169	99.50
2022-12-12	6656	21%	35	hold	1	-0.8	-3185	-6367347	99.50
2022-12-13	6594	17%	10	hold	1	-0.7	-3296	-6133749	99.50
2022-12-14	6570	21%	39	hold	1	-0.7	-3342	-6014346	99.50
2022-12-15	6598	18%	12	hold	1	-0.7	-3302	-6063088	99.50
2022-12-16	6519	17%	10	hold	1	-0.7	-3441	-5755386	99.50
2022-12-19	6391	19%	16	hold	1	-0.7	-3674	-5139473	99.50
2022-12-20	6342	18%	16	hold	1	-0.6	-3760	-4896491	99.50
2022-12-21	6289	18%	16	hold	1	-0.6	-3850	-4633981	99.50
2022-12-22	6187	19%	23	hold	1	-0.5	-4010	-4153686	99.50
2022-12-23	6161	20%	28	hold	1	-0.5	-4056	-3994136	99.50
2022-12-26	6276	18%	14	hold	1	-0.6	-3915	-4341396	99.50
2022-12-27	6326	17%	10	hold	1	-0.6	-3846	-4502990	99.50
2022-12-28	6268	16%	9	hold	1	-0.6	-3944	-4215046	99.50
2022-12-29	6262	17%	11	hold	1	-0.6	-3964	-4138142	99.50
2022-12-30	6282	16%	9	hold	1	-0.6	-3943	-4172735	99.50
2023-01-03	6424	17%	11	hold	1	-0.7	-3752	-4559671	99.50
2023-01-04	6421	15%	5	hold	1	-0.7	-3766	-4499742	99.50
2023-01-05	6485	16%	10	hold	1	-0.7	-3664	-4702260	99.50
2023-01-06	6500	15%	4	hold	1	-0.8	-3647	-4708951	99.50
2023-01-09	6536	16%	11	hold	1	-0.8	-3613	-4690287	99.50
2023-01-10	6540	16%	10	hold	1	-0.8	-3615	-4655332	99.50
2023-01-11	6487	16%	15	hold	1	-0.8	-3722	-4398442	99.50
2023-01-12	6490	16%	14	hold	1	-0.8	-3728	-4355715	99.50
2023-01-13	6518	16%	14	hold	1	-0.8	-3688	-4410875	99.50
2023-01-16	6592	17%	19	hold	1	-0.8	-3580	-4528340	99.50
2023-01-17	6597	17%	19	hold	1	-0.9	-3579	-4494666	99.50
2023-01-18	6613	18%	22	hold	1	-0.9	-3560	-4496070	99.50
2023-01-19	6676	18%	23	hold	1	-0.9	-3443	-4661280	99.50
2023-01-20	6737	18%	23	hold	1	-1.0	-3326	-4803445	99.50

Date	Index	IV	Rank	Act	Pos	$\Gamma(\text{¥M})$	Δ	Vega	NAV(¥M)
2023-01-30	6786	18%	29	hold	1	-1.1	-3325	-4387005	99.50
2023-01-31	6805	17%	21	hold	1	-1.1	-3293	-4383215	99.50
2023-02-01	6917	18%	30	hold	1	-1.2	-3035	-4615339	99.50
2023-02-02	6933	18%	25	hold	1	-1.2	-3004	-4593101	99.50
2023-02-03	6925	19%	34	hold	1	-1.2	-3034	-4515481	99.50
2023-02-06	6891	20%	44	hold	1	-1.2	-3152	-4249810	99.50
2023-02-07	6924	18%	28	hold	1	-1.3	-3078	-4266719	99.50
2023-02-08	6878	15%	8	hold	1	-1.2	-3212	-4085085	99.50
2023-02-09	6999	17%	22	hold	1	-1.3	-2898	-4295377	99.50
2023-02-10	6975	16%	13	hold	1	-1.3	-2974	-4185043	99.50
2023-02-13	7052	19%	42	hold	1	-1.4	-2786	-4120782	99.50
2023-02-14	7061	17%	19	hold	1	-1.5	-2768	-4066470	99.50
2023-02-15	7064	16%	15	hold	1	-1.5	-2770	-4000889	99.50
2023-02-16	6925	18%	26	hold	1	-1.4	-3195	-3653348	99.50
2023-02-17	6869	15%	6	hold	1	-1.4	-3378	-3419282	99.50
2023-02-20	6959	21%	54	hold	1	-1.5	-3157	-3432710	99.50
2023-02-21	6990	18%	26	hold	1	-1.6	-3074	-3425253	99.50
2023-02-22	6998	17%	22	hold	1	-1.6	-3065	-3361818	99.50
2023-02-23	6967	17%	20	hold	1	-1.6	-3189	-3204950	99.50
2023-02-24	6945	14%	2	hold	1	-1.6	-3285	-3061242	99.50
2023-02-27	6894	15%	6	hold	1	-1.6	-3538	-2629796	99.50
2023-02-28	6956	15%	8	hold	1	-1.8	-3349	-2717915	99.50
2023-03-01	7003	15%	5	hold	1	-1.9	-3197	-2743228	99.50
2023-03-02	6972	17%	20	hold	1	-1.9	-3346	-2560881	99.50
2023-03-03	6968	14%	2	hold	1	-2.0	-3398	-2440813	99.50
2023-03-06	6997	17%	25	hold	1	-2.2	-3393	-2175177	99.50
2023-03-07	6855	16%	18	hold	1	-1.7	-4039	-1550272	99.50
2023-03-08	6891	19%	45	hold	1	-1.9	-3967	-1544052	99.50
2023-03-09	6893	19%	40	hold	1	-2.0	-4037	-1396115	99.50
2023-03-10	6798	18%	32	hold	1	-1.4	-4461	-871642	99.50
2023-03-13	6833	19%	48	hold	1	-1.3	-4672	-456203	99.50
2023-03-14	6770	17%	23	hold	1	-1.3	-4672	-456203	99.50
2023-03-15	6803	16%	14	hold	1	-1.3	-4672	-456203	99.50
2023-03-16	6690	17%	25	hold	1	-1.2	-4672	-456203	99.50
2023-03-17	6736	16%	17	hold	0	0.0	0	0	99.90
2023-03-20	6721	17%	21	hold	0	0.0	0	0	99.90
2023-03-21	6809	16%	14	hold	0	0.0	0	0	99.90
2023-03-22	6840	14%	2	hold	0	0.0	0	0	99.90
2023-03-23	6869	14%	4	hold	0	0.0	0	0	99.90
2023-03-24	6868	12%	2	hold	0	0.0	0	0	99.90

Date	Index	IV	Rank	Act	Pos	$\Gamma(\text{¥M})$	Δ	Vega	NAV(¥M)
2023-03-27	6887	16%	16	hold	0	0.0	0	0	99.90
2023-03-28	6825	14%	4	hold	0	0.0	0	0	99.90
2023-03-29	6806	14%	5	hold	0	0.0	0	0	99.90
2023-03-30	6808	14%	4	hold	0	0.0	0	0	99.90
2023-03-31	6876	14%	2	hold	0	0.0	0	0	99.90
2023-04-03	6962	14%	5	hold	0	0.0	0	0	99.90
2023-04-04	6953	15%	9	hold	0	0.0	0	0	99.90
2023-04-06	6983	18%	38	hold	0	0.0	0	0	99.90
2023-04-07	7043	15%	8	hold	0	0.0	0	0	99.90
2023-04-10	6969	14%	6	hold	0	0.0	0	0	99.90
2023-04-11	6984	16%	21	hold	0	0.0	0	0	99.90
2023-04-12	7021	16%	21	hold	0	0.0	0	0	99.90
2023-04-13	6967	13%	2	hold	0	0.0	0	0	99.90
2023-04-14	7020	16%	18	hold	0	0.0	0	0	99.90
2023-04-17	7013	16%	22	hold	0	0.0	0	0	99.90
2023-04-18	6997	16%	19	hold	0	0.0	0	0	99.90
2023-04-19	6966	14%	3	hold	0	0.0	0	0	99.90
2023-04-20	6964	13%	2	hold	0	0.0	0	0	99.90
2023-04-21	6774	14%	6	hold	0	0.0	0	0	99.90
2023-04-24	6725	16%	21	hold	0	0.0	0	0	99.90
2023-04-25	6603	16%	27	hold	0	0.0	0	0	99.90
2023-04-26	6624	16%	28	hold	0	0.0	0	0	99.90
2023-04-27	6633	16%	21	hold	0	0.0	0	0	99.90
2023-04-28	6723	14%	6	hold	0	0.0	0	0	99.90
2023-05-04	6734	14%	4	hold	0	0.0	0	0	99.90
2023-05-05	6654	15%	13	hold	0	0.0	0	0	99.90
2023-05-08	6702	16%	30	hold	0	0.0	0	0	99.90
2023-05-09	6612	17%	33	hold	0	0.0	0	0	99.90
2023-05-10	6627	17%	39	hold	0	0.0	0	0	99.90
2023-05-11	6623	16%	25	hold	0	0.0	0	0	99.90
2023-05-12	6536	16%	31	hold	0	0.0	0	0	99.90
2023-05-15	6586	17%	41	hold	0	0.0	0	0	99.90
2023-05-16	6516	16%	30	hold	0	0.0	0	0	99.90
2023-05-17	6555	16%	25	hold	0	0.0	0	0	99.90
2023-05-18	6584	15%	17	hold	0	0.0	0	0	99.90
2023-05-19	6602	14%	7	hold	0	0.0	0	0	99.90
2023-05-22	6596	13%	3	hold	0	0.0	0	0	99.90
2023-05-23	6528	14%	10	hold	0	0.0	0	0	99.90
2023-05-24	6513	15%	17	hold	0	0.0	0	0	99.90
2023-05-25	6501	15%	16	hold	0	0.0	0	0	99.90

Date	Index	IV	Rank	Act	Pos	$\Gamma(\text{¥M})$	Δ	Vega	NAV(¥M)
2023-05-26	6546	14%	6	hold	0	0.0	0	0	99.90
2023-05-29	6534	14%	8	hold	0	0.0	0	0	99.90
2023-05-30	6564	15%	14	hold	0	0.0	0	0	99.90
2023-05-31	6562	14%	10	hold	0	0.0	0	0	99.90
2023-06-01	6575	16%	34	hold	0	0.0	0	0	99.90
2023-06-02	6626	15%	22	hold	0	0.0	0	0	99.90
2023-06-05	6633	15%	13	hold	0	0.0	0	0	99.90
2023-06-06	6490	15%	21	hold	0	0.0	0	0	99.90
2023-06-07	6489	17%	44	hold	0	0.0	0	0	99.90
2023-06-08	6442	17%	38	hold	0	0.0	0	0	99.90
2023-06-09	6496	15%	15	hold	0	0.0	0	0	99.90
2023-06-12	6530	16%	32	hold	0	0.0	0	0	99.90
2023-06-13	6555	14%	5	hold	0	0.0	0	0	99.90
2023-06-14	6578	13%	3	hold	0	0.0	0	0	99.90
2023-06-15	6614	13%	2	hold	0	0.0	0	0	99.90
2023-06-16	6669	13%	2	hold	0	0.0	0	0	99.90
2023-06-19	6693	16%	30	hold	0	0.0	0	0	99.90
2023-06-20	6694	16%	24	hold	0	0.0	0	0	99.90
2023-06-21	6548	13%	2	hold	0	0.0	0	0	99.90
2023-06-26	6421	15%	15	hold	0	0.0	0	0	99.90
2023-06-27	6507	14%	11	hold	0	0.0	0	0	99.90
2023-06-28	6476	14%	9	hold	0	0.0	0	0	99.90
2023-06-29	6520	14%	9	hold	0	0.0	0	0	99.90
2023-06-30	6602	14%	5	hold	0	0.0	0	0	99.90
2023-07-03	6613	14%	15	hold	0	0.0	0	0	99.90
2023-07-04	6638	14%	14	hold	0	0.0	0	0	99.90
2023-07-05	6584	16%	33	hold	0	0.0	0	0	99.90
2023-07-06	6567	17%	47	hold	0	0.0	0	0	99.90
2023-07-07	6521	15%	18	hold	0	0.0	0	0	99.90
2023-07-10	6527	16%	35	hold	0	0.0	0	0	99.90
2023-07-11	6579	15%	16	hold	0	0.0	0	0	99.90
2023-07-12	6483	16%	29	hold	0	0.0	0	0	99.90
2023-07-13	6548	15%	18	hold	0	0.0	0	0	99.90
2023-07-14	6544	14%	11	hold	0	0.0	0	0	99.90
2023-07-17	6517	16%	32	hold	0	0.0	0	0	99.90
2023-07-18	6510	14%	10	hold	0	0.0	0	0	99.90
2023-07-19	6492	15%	17	hold	0	0.0	0	0	99.90
2023-07-20	6409	15%	22	hold	0	0.0	0	0	99.90
2023-07-21	6401	14%	11	hold	0	0.0	0	0	99.90
2023-07-24	6394	14%	16	hold	0	0.0	0	0	99.90

Date	Index	IV	Rank	Act	Pos	Γ(¥M)	Δ	Vega	NAV(¥M)
2023-07-25	6498	14%	16	hold	0	0.0	0	0	99.90
2023-07-26	6457	15%	18	hold	0	0.0	0	0	99.90
2023-07-27	6408	14%	13	hold	0	0.0	0	0	99.90
2023-07-28	6465	14%	18	hold	0	0.0	0	0	99.90
2023-07-31	6516	16%	33	hold	0	0.0	0	0	99.90
2023-08-01	6507	15%	29	hold	0	0.0	0	0	99.90
2023-08-02	6496	16%	40	hold	0	0.0	0	0	99.90
2023-08-03	6500	16%	36	hold	0	0.0	0	0	99.90
2023-08-04	6535	15%	24	hold	0	0.0	0	0	99.90
2023-08-07	6504	15%	27	hold	0	0.0	0	0	99.90
2023-08-08	6471	15%	21	hold	0	0.0	0	0	99.90
2023-08-09	6421	15%	24	hold	0	0.0	0	0	99.90
2023-08-10	6427	15%	29	hold	0	0.0	0	0	99.90
2023-08-11	6305	16%	32	hold	0	0.0	0	0	99.90
2023-08-14	6319	15%	20	hold	0	0.0	0	0	99.90
2023-08-15	6262	15%	25	hold	0	0.0	0	0	99.90
2023-08-16	6186	15%	26	hold	0	0.0	0	0	99.90
2023-08-17	6248	15%	23	hold	0	0.0	0	0	99.90
2023-08-18	6117	16%	37	hold	0	0.0	0	0	99.90
2023-08-21	6057	17%	57	hold	0	0.0	0	0	99.90
2023-08-22	6099	17%	51	hold	0	0.0	0	0	99.90
2023-08-23	5974	18%	61	hold	0	0.0	0	0	99.90
2023-08-24	5988	17%	59	hold	0	0.0	0	0	99.90
2023-08-25	5879	19%	68	hold	0	0.0	0	0	99.90
2023-08-29	6109	18%	67	hold	0	0.0	0	0	99.90
2023-08-30	6140	17%	58	hold	0	0.0	0	0	99.90
2023-08-31	6104	17%	54	hold	0	0.0	0	0	99.90
2023-09-01	6107	16%	45	hold	0	0.0	0	0	99.90
2023-09-04	6199	15%	33	hold	0	0.0	0	0	99.90
2023-09-05	6168	16%	40	hold	0	0.0	0	0	99.90
2023-09-06	6195	16%	46	hold	0	0.0	0	0	99.90
2023-09-07	6083	17%	54	hold	0	0.0	0	0	99.90
2023-09-08	6102	16%	43	hold	0	0.0	0	0	99.90
2023-09-11	6183	17%	54	hold	0	0.0	0	0	99.90
2023-09-12	6185	15%	21	hold	0	0.0	0	0	99.90
2023-09-13	6103	15%	30	hold	0	0.0	0	0	99.90
2023-09-14	6069	15%	31	hold	0	0.0	0	0	99.90
2023-09-15	6079	15%	28	hold	0	0.0	0	0	99.90
2023-09-18	6084	15%	27	hold	0	0.0	0	0	99.90
2023-09-19	6031	16%	43	hold	0	0.0	0	0	99.90

Date	Index	IV	Rank	Act	Pos	$\Gamma(\text{¥M})$	Δ	Vega	NAV(¥M)
2023-09-20	5983	16%	50	hold	0	0.0	0	0	99.90
2023-09-21	5940	17%	57	hold	0	0.0	0	0	99.90
2023-09-22	6055	16%	42	hold	0	0.0	0	0	99.90
2023-09-25	6027	16%	51	hold	0	0.0	0	0	99.90
2023-09-26	5996	16%	47	hold	0	0.0	0	0	99.90
2023-09-27	6034	16%	51	hold	0	0.0	0	0	99.90
2023-09-28	6079	15%	25	hold	0	0.0	0	0	99.90
2023-10-09	6060	16%	38	hold	0	0.0	0	0	99.90
2023-10-10	6043	16%	37	hold	0	0.0	0	0	99.90
2023-10-11	6059	16%	40	hold	0	0.0	0	0	99.90
2023-10-12	6104	15%	17	hold	0	0.0	0	0	99.90
2023-10-13	6082	14%	8	hold	0	0.0	0	0	99.90
2023-10-16	6024	16%	50	hold	0	0.0	0	0	99.90
2023-10-17	6011	15%	21	hold	0	0.0	0	0	99.90
2023-10-18	5908	15%	33	hold	0	0.0	0	0	99.90
2023-10-19	5843	17%	68	hold	0	0.0	0	0	99.90
2023-10-20	5774	18%	77	hold	0	0.0	0	0	99.90
2023-10-23	5638	20%	84	sell	2	-3.7	0	0	99.90
2023-10-24	5719	18%	77	hold	2	-3.8	144	-5459076	99.90
2023-10-25	5779	17%	67	hold	2	-3.8	838	-5182125	99.90
2023-10-26	5812	16%	54	hold	2	-3.7	1224	-4893695	99.90
2023-10-27	5917	15%	31	hold	2	-3.1	2312	-3948540	99.90
2023-10-30	6007	16%	44	hold	2	-2.4	3166	-2636580	99.90
2023-10-31	5969	18%	73	hold	2	-2.7	2957	-2836666	99.90
2023-11-01	5958	15%	19	hold	2	-2.9	2932	-2778569	99.90
2023-11-02	5885	15%	33	hold	2	-3.7	2317	-3314575	99.90
2023-11-03	5973	16%	48	hold	2	-2.7	3182	-2291049	99.90
2023-11-06	6097	17%	67	hold	2	-1.2	4033	-816183	99.90
2023-11-07	6117	17%	71	hold	2	-0.9	4143	-579777	99.90
2023-11-08	6139	18%	76	hold	2	-0.6	4235	-377865	99.90
2023-11-09	6101	18%	82	sell	4	-4.6	4210	-398896	99.90
2023-11-10	6089	18%	75	hold	4	-4.8	3663	-1598677	99.90
2023-11-13	6145	19%	85	sell	6	-8.9	4551	-896683	99.90
2023-11-14	6182	19%	87	sell	8	-12.9	4745	-1606917	99.90
2023-11-15	6207	16%	39	hold	8	-13.1	3831	-6975975	99.90
2023-11-16	6145	16%	51	hold	8	-12.9	3171	-6808572	99.90
2023-11-17	6199	15%	33	hold	2	-4.1	-1005	-5193197	98.08
2023-11-20	6253	16%	41	hold	2	-4.2	-414	-4779989	98.08
2023-11-21	6212	16%	41	hold	2	-4.4	-871	-4798487	98.08
2023-11-22	6133	16%	52	hold	2	-4.4	-1810	-4556472	98.08

Date	Index	IV	Rank	Act	Pos	Γ(¥M)	Δ	Vega	NAV(¥M)
2023-11-23	6198	15%	34	hold	2	-4.7	-1050	-4605971	98.08
2023-11-24	6115	15%	24	hold	2	-4.4	-2065	-4238380	98.08
2023-11-27	6111	16%	44	hold	2	-4.7	-2208	-3854001	98.08
2023-11-28	6143	19%	88	sell	4	-9.0	-1822	-3920845	98.08
2023-11-29	6113	16%	44	hold	4	-9.1	-2846	-6294222	98.08
2023-11-30	6081	19%	88	sell	6	-12.8	-3693	-5798259	98.08
2023-12-01	6130	18%	83	sell	8	-17.6	-2927	-8309505	98.08
2023-12-04	6114	21%	98	sell	10	-23.7	-4089	-9172140	98.08
2023-12-05	5993	19%	92	sell	12	-20.5	-12114	-7708462	98.08
2023-12-06	6024	19%	88	sell	14	-28.2	-11286	-10116736	98.08
2023-12-07	6021	18%	82	sell	16	-32.8	-12100	-10842779	98.08
2023-12-08	6003	17%	69	hold	16	-31.8	-13919	-10720424	98.08
2023-12-11	6075	19%	95	sell	18	-51.4	-7184	-8718883	98.08
2023-12-12	6079	15%	22	hold	18	-51.4	-7520	-9516554	98.08
2023-12-13	6020	15%	34	hold	18	-50.4	-7520	-9516554	98.08
2023-12-14	5992	16%	45	hold	18	-50.0	-7520	-9516554	98.08
2023-12-15	5952	15%	27	hold	0	0.0	0	0	97.78
2023-12-18	5857	17%	65	hold	0	0.0	0	0	97.78
2023-12-19	5864	16%	61	hold	0	0.0	0	0	97.78
2023-12-20	5761	17%	79	hold	0	0.0	0	0	97.78
2023-12-21	5799	17%	70	hold	0	0.0	0	0	97.78
2023-12-22	5734	17%	75	hold	0	0.0	0	0	97.78
2023-12-25	5736	17%	80	hold	0	0.0	0	0	97.78
2023-12-26	5652	19%	93	sell	2	-3.9	0	0	97.78
2023-12-27	5696	18%	89	sell	4	-8.0	-205	-4842631	97.78
2023-12-28	5806	17%	79	hold	4	-7.5	1949	-8317904	97.78
2023-12-29	5887	16%	60	hold	4	-6.3	3671	-6724146	97.78
2024-01-02	5855	16%	63	hold	4	-7.3	3364	-6310269	97.78
2024-01-03	5824	16%	63	hold	4	-8.1	2758	-6584285	97.78
2024-01-04	5783	17%	81	sell	6	-13.1	1783	-6929260	97.78
2024-01-05	5676	19%	94	sell	8	-17.5	-3180	-9523503	97.78
2024-01-08	5544	25%	100	sell	10	-16.2	-10883	-7009915	97.78
2024-01-09	5553	25%	100	sell	12	-21.0	-11051	-9535649	97.78
2024-01-10	5512	23%	99	sell	14	-21.9	-15525	-9669540	97.78
2024-01-11	5611	23%	99	sell	16	-34.0	-7909	-13987670	97.78
2024-01-12	5574	23%	98	sell	18	-36.5	-12278	-13646542	97.78
2024-01-15	5559	25%	100	sell	20	-43.4	-16546	-9805749	97.78
2024-01-16	5539	21%	98	sell	22	-46.4	-17628	-10929224	97.78
2024-01-17	5389	25%	100	sell	24	-46.9	-19295	-16020584	97.78
2024-01-18	5373	27%	100	sell	26	-49.7	-20231	-21001841	97.78

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2024-01-19	5307	25%	99	sell	8	-11.7	-4863	-14686000	87.77
2024-01-22	5001	34%	100	sell	10	-7.3	-14945	-9506883	87.77
2024-01-23	5080	29%	100	sell	12	-11.8	-12268	-16592481	87.77
2024-01-24	5143	30%	100	sell	14	-16.1	-9321	-23047737	87.77
2024-01-25	5316	27%	98	sell	16	-22.6	2652	-29976538	87.77
2024-01-26	5270	27%	98	sell	18	-25.7	-700	-33913357	87.77
2024-01-29	5131	29%	99	sell	20	-26.1	-13981	-31545702	87.77
2024-01-30	4985	33%	100	sell	22	-22.7	-27106	-27316978	87.77
2024-01-31	4785	35%	100	sell	24	-15.0	-42310	-17779381	87.77
2024-02-01	4750	34%	100	sell	26	-15.8	-44989	-18434740	87.77
2024-02-02	4575	37%	100	sell	28	-10.9	-55549	-12147695	87.77
2024-02-05	4293	36%	100	sell	30	-4.1	-66713	-4270593	87.77
2024-02-06	4592	40%	100	sell	32	-14.5	-55194	-24454246	87.77
2024-02-07	4798	33%	97	sell	34	-27.2	-38375	-32068158	87.77
2024-02-08	4993	35%	99	sell	36	-41.4	-12089	-37024447	87.77
2024-02-19	5030	37%	99	sell	4	-2.5	3072	-10189560	105.85
2024-02-20	5046	30%	96	sell	6	-5.1	2951	-15216344	105.85
2024-02-21	5073	30%	96	sell	8	-7.9	3188	-20026685	105.85
2024-02-22	5152	32%	96	sell	10	-10.6	5531	-24260443	105.85
2024-02-23	5226	32%	96	sell	12	-13.1	8243	-27889103	105.85
2024-02-26	5255	30%	94	sell	14	-16.7	10470	-30280590	105.85
2024-02-27	5394	30%	95	sell	16	-17.9	18184	-29917483	105.85
2024-02-28	5152	33%	96	sell	18	-23.3	1112	-37854140	105.85
2024-02-29	5345	34%	98	sell	20	-25.3	17253	-38064898	105.85
2024-03-01	5402	34%	97	sell	22	-27.4	23241	-38475182	105.85
2024-03-04	5428	35%	98	sell	24	-31.7	27680	-36079814	105.85
2024-03-05	5375	33%	95	sell	26	-38.6	22731	-40324320	105.85
2024-03-06	5381	33%	94	sell	28	-43.4	23741	-40992072	105.85
2024-03-07	5303	31%	93	sell	30	-52.1	11088	-43880437	105.85
2024-03-08	5370	27%	89	sell	32	-55.9	23579	-41598226	105.85
2024-03-11	5467	31%	93	sell	34	-57.1	46121	-26823205	105.85
2024-03-12	5496	26%	88	sell	36	-60.5	45681	-28051512	105.85
2024-03-13	5522	24%	85	sell	38	-64.0	46201	-34862476	105.85
2024-03-14	5487	24%	85	sell	40	-66.4	45990	-41758939	105.85
2024-03-15	5556	25%	85	sell	10	-12.1	6419	-26728365	105.80
2024-03-18	5648	24%	84	sell	12	-15.1	9940	-30753672	105.80
2024-03-19	5607	24%	84	sell	14	-18.9	8748	-37622146	105.80
2024-03-20	5659	24%	84	sell	16	-21.9	12205	-42187580	105.80
2024-03-21	5658	24%	83	sell	18	-25.6	12055	-47868809	105.80
2024-03-22	5596	24%	83	sell	20	-30.0	6747	-54337198	105.80

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2024-03-25	5466	26%	87	sell	22	-33.1	-6312	-54773401	105.80
2024-03-26	5448	27%	88	sell	24	-36.3	-8786	-58272280	105.80
2024-03-27	5266	31%	92	sell	26	-28.9	-28611	-47346507	105.80
2024-03-28	5382	28%	89	sell	28	-40.3	-15717	-61548107	105.80
2024-03-29	5441	26%	87	sell	30	-47.5	-7616	-68862359	105.80
2024-04-01	5559	25%	85	sell	32	-56.7	12267	-69952245	105.80
2024-04-02	5531	25%	83	sell	34	-61.9	6506	-72689552	105.80
2024-04-03	5501	24%	81	sell	36	-67.0	311	-74281655	105.80
2024-04-08	5400	27%	88	sell	38	-72.0	-26962	-57514009	105.80
2024-04-09	5469	27%	87	sell	40	-86.9	-10611	-62395294	105.80
2024-04-10	5367	27%	88	sell	42	-77.2	-41232	-52080922	105.80
2024-04-11	5380	26%	85	sell	44	-86.4	-40775	-52189929	105.80
2024-04-12	5339	28%	89	sell	46	-81.0	-55643	-44539090	105.80
2024-04-15	5288	31%	92	sell	48	-67.0	-78477	-24960085	105.80
2024-04-16	5067	32%	93	sell	50	-63.8	-79528	-27465343	105.80
2024-04-17	5287	29%	88	sell	52	-71.7	-77320	-31620454	105.80
2024-04-18	5287	29%	89	sell	54	-74.5	-77170	-37422139	105.80
2024-04-19	5264	28%	87	sell	10	-11.0	5191	-23564510	110.35
2024-04-22	5246	28%	87	sell	12	-14.5	4290	-28020794	110.35
2024-04-23	5218	28%	86	sell	14	-17.9	3526	-32833281	110.35
2024-04-24	5306	26%	82	sell	16	-21.3	9658	-36572485	110.35
2024-04-25	5314	25%	77	hold	16	-21.6	10660	-40825956	110.35
2024-04-26	5416	24%	74	hold	16	-19.9	18231	-36406499	110.35
2024-04-29	5545	26%	81	sell	18	-19.5	26972	-26398709	110.35
2024-04-30	5497	24%	74	hold	18	-21.9	24885	-32766946	110.35
2024-05-06	5607	26%	81	sell	20	-20.2	34941	-18194772	110.35
2024-05-07	5625	25%	77	hold	20	-18.9	36600	-18698552	110.35
2024-05-08	5537	25%	79	hold	20	-25.2	31042	-21673462	110.35
2024-05-09	5627	23%	70	hold	20	-18.4	38107	-15460330	110.35
2024-05-10	5574	23%	69	hold	20	-22.2	35511	-16207757	110.35
2024-05-13	5521	27%	84	sell	22	-30.1	34196	-12485192	110.35
2024-05-14	5552	25%	75	hold	22	-30.4	34195	-13455179	110.35
2024-05-15	5497	25%	78	hold	22	-29.9	34145	-13608611	110.35
2024-05-16	5489	24%	71	hold	22	-29.8	34141	-13600475	110.35
2024-05-17	5563	22%	67	hold	2	-0.3	4190	-4321875	110.39
2024-05-20	5597	23%	67	hold	2	-0.3	4233	-4104127	110.39
2024-05-21	5537	22%	67	hold	2	-0.3	4183	-4260694	110.39
2024-05-22	5540	23%	67	hold	2	-0.3	4190	-4213425	110.39
2024-05-23	5413	23%	69	hold	2	-0.3	4062	-4627006	110.39
2024-05-24	5350	23%	68	hold	2	-0.4	3991	-4836471	110.39

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2024-05-27	5405	24%	70	hold	2	-0.3	4072	-4496946	110.39
2024-05-28	5348	29%	88	sell	4	-3.7	4009	-4678337	110.39
2024-05-29	5351	18%	56	hold	4	-3.8	4253	-9195241	110.39
2024-05-30	5334	26%	80	hold	4	-3.9	4037	-9166782	110.39
2024-05-31	5355	22%	64	hold	4	-3.9	4338	-8871408	110.39
2024-06-03	5285	24%	71	hold	4	-4.3	3325	-8803681	110.39
2024-06-04	5314	22%	63	hold	4	-4.4	3780	-8521626	110.39
2024-06-05	5244	20%	62	hold	4	-4.5	2650	-8547310	110.39
2024-06-06	5131	25%	77	hold	4	-3.5	897	-8066758	110.39
2024-06-07	5154	20%	61	hold	4	-3.8	1149	-7969891	110.39
2024-06-11	5199	24%	70	hold	4	-4.8	1587	-7323444	110.39
2024-06-12	5216	22%	63	hold	4	-5.3	1831	-7161186	110.39
2024-06-13	5180	22%	62	hold	4	-4.7	1062	-6781306	110.39
2024-06-14	5181	20%	60	hold	4	-4.8	943	-6530000	110.39
2024-06-17	5184	22%	62	hold	4	-5.0	461	-5674141	110.39
2024-06-18	5227	21%	60	hold	4	-5.1	536	-5437448	110.39
2024-06-19	5160	23%	65	hold	4	-5.0	436	-5687805	110.39
2024-06-20	5056	23%	64	hold	4	-4.9	249	-6150563	110.39
2024-06-21	5055	23%	65	hold	2	-0.5	3689	-4920328	109.90
2024-06-24	4888	25%	78	hold	2	-0.7	3303	-5712490	109.90
2024-06-25	4848	26%	81	sell	4	-3.7	3191	-5904107	109.90
2024-06-26	4986	24%	70	hold	4	-3.1	6019	-9029321	109.90
2024-06-27	4864	26%	78	hold	4	-3.7	4326	-10279653	109.90
2024-06-28	4896	25%	75	hold	4	-3.7	4850	-9788560	109.90
2024-07-01	4940	25%	72	hold	4	-3.6	5642	-8732055	109.90
2024-07-02	4906	25%	73	hold	4	-3.9	5157	-8967970	109.90
2024-07-03	4867	24%	67	hold	4	-4.2	4544	-9202169	109.90
2024-07-04	4762	24%	70	hold	4	-4.5	2543	-9759059	109.90
2024-07-05	4811	23%	62	hold	4	-4.7	3523	-9308891	109.90
2024-07-08	4694	27%	85	sell	6	-8.4	942	-9027934	109.90
2024-07-09	4797	26%	79	hold	6	-8.8	4524	-11123131	109.90
2024-07-10	4778	27%	81	sell	8	-13.3	3811	-10943652	109.90
2024-07-11	4894	24%	64	hold	8	-11.3	9460	-10832600	109.90
2024-07-12	4878	22%	55	hold	8	-12.4	9025	-10604751	109.90
2024-07-15	4828	27%	82	sell	10	-21.3	7079	-9622678	109.90
2024-07-16	4837	22%	56	hold	10	-21.4	7144	-10476081	109.90
2024-07-17	4796	24%	67	hold	10	-21.1	7018	-10666035	109.90
2024-07-18	4812	25%	74	hold	10	-21.2	7088	-10498108	109.90
2024-07-19	4821	24%	62	hold	2	-0.8	3352	-4643812	113.29
2024-07-22	4827	24%	65	hold	2	-0.8	3408	-4416666	113.29

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2024-07-23	4695	26%	79	hold	2	-1.0	2917	-5182280	113.29
2024-07-24	4631	26%	78	hold	2	-1.1	2626	-5526910	113.29
2024-07-25	4633	26%	77	hold	2	-1.1	2646	-5450092	113.29
2024-07-26	4702	24%	59	hold	2	-1.0	2989	-4932684	113.29
2024-07-29	4686	25%	67	hold	2	-1.0	2958	-4830425	113.29
2024-07-30	4702	24%	59	hold	2	-1.0	3049	-4649816	113.29
2024-07-31	4889	23%	56	hold	2	-0.6	3719	-3468596	113.29
2024-08-01	4878	23%	55	hold	2	-0.7	3704	-3457708	113.29
2024-08-02	4810	24%	61	hold	2	-0.8	3511	-3767367	113.29
2024-08-05	4679	31%	91	sell	4	-4.4	3038	-4362698	113.29
2024-08-06	4750	28%	85	sell	6	-8.1	4306	-6880142	113.29
2024-08-07	4743	26%	79	hold	6	-8.6	4801	-9371451	113.29
2024-08-08	4739	23%	56	hold	6	-9.0	4737	-9006631	113.29
2024-08-09	4703	24%	57	hold	6	-9.8	3232	-8904576	113.29
2024-08-12	4674	26%	77	hold	6	-12.6	1615	-7560331	113.29
2024-08-13	4698	23%	51	hold	6	-12.6	1746	-7327032	113.29
2024-08-14	4649	23%	50	hold	6	-12.5	1535	-7555785	113.29
2024-08-15	4692	22%	47	hold	6	-12.6	1765	-7195766	113.29
2024-08-16	4656	21%	43	hold	2	-1.1	3149	-3622244	114.75
2024-08-19	4664	21%	42	hold	2	-1.1	3264	-3305272	114.75
2024-08-20	4579	21%	43	hold	2	-1.4	2810	-3771033	114.75
2024-08-21	4548	21%	42	hold	2	-1.5	2626	-3885673	114.75
2024-08-22	4492	21%	44	hold	2	-1.7	2216	-4155275	114.75
2024-08-23	4495	21%	43	hold	2	-1.7	2270	-4040091	114.75
2024-08-26	4513	22%	45	hold	2	-1.7	2500	-3632999	114.75
2024-08-27	4460	21%	41	hold	2	-1.9	2057	-3866625	114.75
2024-08-28	4471	22%	45	hold	2	-1.9	2189	-3698714	114.75
2024-08-29	4542	20%	39	hold	2	-1.6	2839	-3116055	114.75
2024-08-30	4629	19%	35	hold	2	-1.2	3444	-2436080	114.75
2024-09-02	4533	21%	41	hold	2	-1.7	2935	-2721987	114.75
2024-09-03	4572	21%	41	hold	2	-1.4	3282	-2332520	114.75
2024-09-04	4551	21%	39	hold	2	-1.5	3181	-2349063	114.75
2024-09-05	4587	21%	40	hold	2	-1.3	3486	-1992457	114.75
2024-09-06	4508	22%	43	hold	2	-1.8	2951	-2371903	114.75
2024-09-09	4476	23%	50	hold	2	-2.2	2844	-2159991	114.75
2024-09-10	4488	24%	56	hold	2	-2.1	3057	-1917483	114.75
2024-09-11	4486	23%	55	hold	2	-2.1	3138	-1761945	114.75
2024-09-12	4469	20%	35	hold	2	-2.3	3060	-1704257	114.75
2024-09-13	4413	17%	22	hold	2	-3.1	2425	-1904684	114.75
2024-09-27	5136	38%	100	sell	2	-2.7	0	0	114.56

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2024-09-30	5709	45%	100	sell	4	-2.6	3913	-1928352	114.56
2024-10-08	6202	70%	100	sell	6	-3.2	8083	-2811650	114.56
2024-10-09	5727	51%	100	sell	8	-7.2	2939	-7719410	114.56
2024-10-10	5655	47%	99	sell	10	-10.5	1579	-10413362	114.56
2024-10-11	5417	57%	100	sell	12	-12.5	-6992	-10619357	114.56
2024-10-14	5616	41%	98	sell	14	-20.5	1004	-10608358	114.56
2024-10-15	5507	33%	91	sell	16	-22.0	1339	-12405894	114.56
2024-10-16	5524	34%	93	sell	18	-24.3	1058	-18705353	114.56
2024-10-17	5506	32%	90	sell	20	-26.5	494	-24712274	114.56
2024-10-18	5749	39%	97	sell	8	-8.8	4041	-17950677	124.76
2024-10-21	5861	39%	97	sell	10	-10.8	7767	-21378474	124.76
2024-10-22	5889	38%	96	sell	12	-13.1	8798	-26380552	124.76
2024-10-23	5904	36%	95	sell	14	-15.6	9669	-31336386	124.76
2024-10-24	5862	35%	94	sell	16	-18.9	8125	-36979406	124.76
2024-10-25	5975	35%	93	sell	18	-21.0	14239	-39320093	124.76
2024-10-28	6082	36%	94	sell	20	-23.2	21224	-37496437	124.76
2024-10-29	5984	35%	92	sell	22	-28.7	15026	-44425099	124.76
2024-10-30	6019	36%	94	sell	24	-31.9	18203	-46786660	124.76
2024-10-31	6117	37%	95	sell	26	-33.2	27227	-45900545	124.76
2024-11-01	5930	39%	97	sell	28	-40.9	9389	-54192777	124.76
2024-11-04	6053	40%	97	sell	30	-45.3	25191	-47786517	124.76
2024-11-05	6267	39%	97	sell	32	-38.0	48898	-36443430	124.76
2024-11-06	6293	38%	95	sell	34	-40.6	52682	-35273976	124.76
2024-11-07	6404	37%	94	sell	36	-35.8	64215	-27459068	124.76
2024-11-08	6423	36%	91	sell	38	-37.9	67656	-25511340	124.76
2024-11-11	6579	35%	89	sell	40	-24.6	84483	-8821476	124.76
2024-11-12	6492	29%	77	hold	40	-24.0	83697	-10273812	124.76
2024-11-13	6474	27%	73	hold	40	-23.8	83697	-10273812	124.76
2024-11-14	6272	29%	77	hold	40	-22.4	83697	-10273812	124.76
2024-11-15	6126	30%	78	hold	0	0.0	0	0	152.21
2024-11-18	5975	33%	86	sell	2	-2.4	0	0	152.21
2024-11-19	6130	33%	83	sell	4	-5.0	1151	-6825559	152.21
2024-11-20	6251	30%	78	hold	4	-4.9	3221	-13062661	152.21
2024-11-21	6262	29%	73	hold	4	-4.9	3398	-12731212	152.21
2024-11-22	6030	31%	81	sell	6	-8.1	238	-13258846	152.21
2024-11-25	6052	32%	81	sell	8	-11.5	1203	-18770704	152.21
2024-11-26	5982	28%	71	hold	8	-11.5	-1206	-24265068	152.21
2024-11-27	6119	28%	71	hold	8	-11.8	3184	-23876679	152.21
2024-11-28	6086	29%	75	hold	8	-12.2	2149	-23483628	152.21
2024-11-29	6189	30%	77	hold	8	-12.0	5514	-22099136	152.21

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2024-12-02	6314	31%	81	sell	10	-14.8	9656	-17935093	152.21
2024-12-03	6303	31%	79	hold	10	-15.3	9633	-22737981	152.21
2024-12-04	6205	32%	81	sell	12	-20.6	5717	-23690988	152.21
2024-12-05	6286	31%	77	hold	12	-20.0	10244	-26193902	152.21
2024-12-06	6350	29%	72	hold	12	-19.0	13662	-23270331	152.21
2024-12-09	6303	30%	76	hold	12	-21.8	12398	-21040206	152.21
2024-12-10	6362	29%	69	hold	12	-20.3	15953	-17824190	152.21
2024-12-11	6447	28%	67	hold	12	-16.7	20406	-13297512	152.21
2024-12-12	6490	28%	66	hold	12	-14.4	22668	-10282763	152.21
2024-12-13	6355	24%	37	hold	12	-22.0	17494	-13561458	152.21
2024-12-16	6278	26%	60	hold	12	-29.9	15326	-10523564	152.21
2024-12-17	6144	27%	63	hold	12	-28.6	15326	-10523564	152.21
2024-12-18	6196	28%	65	hold	12	-29.1	15326	-10523564	152.21
2024-12-19	6207	28%	66	hold	12	-29.2	15326	-10523564	152.21
2024-12-20	6272	26%	54	hold	0	0.0	0	0	161.34
2024-12-23	6096	30%	75	hold	0	0.0	0	0	161.34
2024-12-24	6164	29%	69	hold	0	0.0	0	0	161.34
2024-12-25	6095	29%	72	hold	0	0.0	0	0	161.34
2024-12-26	6160	27%	63	hold	0	0.0	0	0	161.34
2024-12-27	6172	26%	54	hold	0	0.0	0	0	161.34
2024-12-30	6146	28%	64	hold	0	0.0	0	0	161.34
2024-12-31	5958	29%	72	hold	0	0.0	0	0	161.34
2025-01-02	5797	32%	83	sell	2	-3.6	0	0	161.34
2025-01-03	5625	32%	82	sell	4	-6.8	-1717	-3974288	161.34
2025-01-06	5608	35%	89	sell	6	-11.1	-1882	-7171032	161.34
2025-01-07	5692	29%	69	hold	6	-11.8	1367	-10677072	161.34
2025-01-08	5662	30%	73	hold	6	-12.4	225	-10085102	161.34
2025-01-09	5673	30%	71	hold	6	-13.1	641	-9453289	161.34
2025-01-10	5545	31%	77	hold	6	-12.4	-4795	-7903142	161.34
2025-01-13	5559	37%	94	sell	8	-19.4	-5360	-5635235	161.34
2025-01-14	5811	32%	79	hold	8	-21.2	-5905	-7239221	161.34
2025-01-15	5776	30%	71	hold	8	-20.9	-5905	-7239221	161.34
2025-01-16	5801	30%	73	hold	8	-21.1	-5905	-7239221	161.34
2025-01-17	5842	30%	70	hold	0	0.0	0	0	164.87
2025-01-20	5879	29%	67	hold	0	0.0	0	0	164.87
2025-01-21	5908	29%	66	hold	0	0.0	0	0	164.87
2025-01-22	5856	29%	67	hold	0	0.0	0	0	164.87
2025-01-23	5829	28%	60	hold	0	0.0	0	0	164.87
2025-01-24	5938	27%	51	hold	0	0.0	0	0	164.87
2025-01-27	5846	27%	50	hold	0	0.0	0	0	164.87

Date	Index	IV	Rank	Act	Pos	Γ(¥M)	Δ	Vega	NAV(¥M)
2025-02-05	5881	27%	56	hold	0	0.0	0	0	164.87
2025-02-06	6042	26%	47	hold	0	0.0	0	0	164.87
2025-02-07	6134	24%	29	hold	0	0.0	0	0	164.87
2025-02-10	6211	27%	53	hold	0	0.0	0	0	164.87
2025-02-11	6190	26%	45	hold	0	0.0	0	0	164.87
2025-02-12	6285	25%	33	hold	0	0.0	0	0	164.87
2025-02-13	6212	24%	27	hold	0	0.0	0	0	164.87
2025-02-14	6249	21%	8	hold	0	0.0	0	0	164.87
2025-02-17	6282	28%	59	hold	0	0.0	0	0	164.87
2025-02-18	6142	24%	32	hold	0	0.0	0	0	164.87
2025-02-19	6289	24%	22	hold	0	0.0	0	0	164.87
2025-02-20	6334	24%	23	hold	0	0.0	0	0	164.87
2025-02-21	6449	24%	21	hold	0	0.0	0	0	164.87
2025-02-24	6464	25%	35	hold	0	0.0	0	0	164.87
2025-02-25	6435	24%	33	hold	0	0.0	0	0	164.87
2025-02-26	6524	25%	40	hold	0	0.0	0	0	164.87
2025-02-27	6500	25%	35	hold	0	0.0	0	0	164.87
2025-02-28	6270	26%	42	hold	0	0.0	0	0	164.87
2025-03-03	6274	25%	40	hold	0	0.0	0	0	164.87
2025-03-04	6358	24%	34	hold	0	0.0	0	0	164.87
2025-03-05	6398	24%	31	hold	0	0.0	0	0	164.87
2025-03-06	6535	24%	31	hold	0	0.0	0	0	164.87
2025-03-07	6508	23%	20	hold	0	0.0	0	0	164.87
2025-03-10	6521	32%	83	sell	2	-3.9	0	0	164.87
2025-03-11	6552	31%	79	hold	2	-4.0	-845	-2721578	164.87
2025-03-12	6567	30%	72	hold	2	-4.1	-678	-2531840	164.87
2025-03-13	6467	25%	36	hold	2	-4.6	-1719	-2462476	164.87
2025-03-14	6571	23%	21	hold	2	-4.5	-560	-2191602	164.87
2025-03-17	6590	30%	73	hold	2	-5.1	-118	-1499554	164.87
2025-03-18	6612	23%	15	hold	2	-5.2	-118	-1499554	164.87
2025-03-19	6565	23%	17	hold	2	-5.1	-118	-1499554	164.87
2025-03-20	6535	23%	15	hold	2	-5.0	-118	-1499554	164.87
2025-03-21	6406	22%	13	hold	0	0.0	0	0	165.40
2025-03-24	6360	22%	10	hold	0	0.0	0	0	165.40
2025-03-25	6311	22%	12	hold	0	0.0	0	0	165.40
2025-03-26	6335	21%	9	hold	0	0.0	0	0	165.40
2025-03-27	6329	21%	6	hold	0	0.0	0	0	165.40
2025-03-28	6268	22%	11	hold	0	0.0	0	0	165.40
2025-03-31	6227	23%	24	hold	0	0.0	0	0	165.40
2025-04-01	6259	22%	14	hold	0	0.0	0	0	165.40

Date	Index	IV	Rank	Act	Pos	Γ (¥M)	Δ	Vega	NAV(¥M)
2025-04-02	6277	22%	13	hold	0	0.0	0	0	165.40
2025-04-03	6203	23%	23	hold	0	0.0	0	0	165.40
2025-04-07	5496	44%	98	sell	2	-2.2	0	0	165.40
2025-04-08	5530	41%	98	sell	4	-5.2	472	-3624801	165.40
2025-04-09	5652	37%	93	sell	6	-8.6	3069	-6524250	165.40
2025-04-10	5785	33%	88	sell	8	-12.0	6017	-8284024	165.40
2025-04-11	5862	32%	84	sell	10	-15.4	8311	-9362734	165.40
2025-04-14	5939	36%	91	sell	12	-19.2	12716	-6632346	165.40
2025-04-15	5914	26%	51	hold	12	-19.0	12305	-7933167	165.40
2025-04-16	5835	27%	59	hold	12	-18.5	12305	-7933167	165.40
2025-04-17	5840	26%	50	hold	12	-18.5	12305	-7933167	165.40
2025-04-18	5832	25%	45	hold	0	0.0	0	0	168.61
2025-04-21	5953	25%	41	hold	0	0.0	0	0	168.61
2025-04-22	5949	25%	41	hold	0	0.0	0	0	168.61
2025-04-23	5985	24%	37	hold	0	0.0	0	0	168.61
2025-04-24	5920	24%	37	hold	0	0.0	0	0	168.61
2025-04-25	5940	24%	38	hold	0	0.0	0	0	168.61
2025-04-28	5877	25%	45	hold	0	0.0	0	0	168.61
2025-04-29	5903	24%	29	hold	0	0.0	0	0	168.61
2025-04-30	5950	25%	42	hold	0	0.0	0	0	168.61
2025-05-06	6103	23%	21	hold	0	0.0	0	0	168.61
2025-05-07	6111	22%	15	hold	0	0.0	0	0	168.61
2025-05-08	6158	25%	46	hold	0	0.0	0	0	168.61
2025-05-09	6082	24%	28	hold	0	0.0	0	0	168.61
2025-05-12	6167	28%	63	hold	0	0.0	0	0	168.61
2025-05-13	6151	30%	75	hold	0	0.0	0	0	168.61
2025-05-14	6160	22%	15	hold	0	0.0	0	0	168.61
2025-05-15	6057	22%	13	hold	0	0.0	0	0	168.61
2025-05-16	6068	28%	69	hold	0	0.0	0	0	168.61
2025-05-19	6095	21%	4	hold	0	0.0	0	0	168.61
2025-05-20	6146	29%	70	hold	0	0.0	0	0	168.61
2025-05-21	6132	29%	71	hold	0	0.0	0	0	168.61
2025-05-22	6066	29%	71	hold	0	0.0	0	0	168.61
2025-05-23	5990	23%	19	hold	0	0.0	0	0	168.61
2025-05-26	6029	22%	15	hold	0	0.0	0	0	168.61
2025-05-27	6008	21%	7	hold	0	0.0	0	0	168.61
2025-05-28	5984	22%	14	hold	0	0.0	0	0	168.61
2025-05-29	6090	20%	2	hold	0	0.0	0	0	168.61
2025-05-30	6027	19%	2	hold	0	0.0	0	0	168.61
2025-06-03	6070	26%	52	hold	0	0.0	0	0	168.61

Date	Index	IV	Rank	Act	Pos	$\Gamma(\text{¥M})$	Δ	Vega	NAV(¥M)
2025-06-04	6123	26%	54	hold	0	0.0	0	0	168.61
2025-06-05	6167	25%	48	hold	0	0.0	0	0	168.61
2025-06-06	6153	24%	31	hold	0	0.0	0	0	168.61
2025-06-09	6219	23%	29	hold	0	0.0	0	0	168.61
2025-06-10	6162	24%	39	hold	0	0.0	0	0	168.61
2025-06-11	6187	19%	2	hold	0	0.0	0	0	168.61
2025-06-12	6192	19%	2	hold	0	0.0	0	0	168.61
2025-06-13	6106	19%	1	hold	0	0.0	0	0	168.61
2025-06-16	6147	22%	18	hold	0	0.0	0	0	168.61
2025-06-17	6141	20%	5	hold	0	0.0	0	0	168.61
2025-06-18	6135	21%	9	hold	0	0.0	0	0	168.61
2025-06-19	6048	21%	6	hold	0	0.0	0	0	168.61
2025-06-20	6000	20%	4	hold	0	0.0	0	0	168.61
2025-06-23	6078	19%	2	hold	0	0.0	0	0	168.61
2025-06-24	6195	19%	1	hold	0	0.0	0	0	168.61
2025-06-25	6276	20%	6	hold	0	0.0	0	0	168.61
2025-06-26	6248	20%	4	hold	0	0.0	0	0	168.61
2025-06-27	6277	21%	9	hold	0	0.0	0	0	168.61
2025-06-30	6356	23%	30	hold	0	0.0	0	0	168.61
2025-07-01	6374	24%	38	hold	0	0.0	0	0	168.61
2025-07-02	6309	18%	1	hold	0	0.0	0	0	168.61
2025-07-03	6343	22%	15	hold	0	0.0	0	0	168.61
2025-07-04	6312	18%	1	hold	0	0.0	0	0	168.61
2025-07-07	6327	24%	40	hold	0	0.0	0	0	168.61
2025-07-08	6408	20%	6	hold	0	0.0	0	0	168.61
2025-07-09	6390	22%	20	hold	0	0.0	0	0	168.61
2025-07-10	6407	18%	2	hold	0	0.0	0	0	168.61
2025-07-11	6461	18%	1	hold	0	0.0	0	0	168.61
2025-07-14	6462	21%	9	hold	0	0.0	0	0	168.61
2025-07-15	6443	23%	25	hold	0	0.0	0	0	168.61
2025-07-16	6462	22%	21	hold	0	0.0	0	0	168.61
2025-07-17	6536	20%	6	hold	0	0.0	0	0	168.61
2025-07-18	6552	19%	4	hold	0	0.0	0	0	168.61
2025-07-21	6612	21%	11	hold	0	0.0	0	0	168.61
2025-07-22	6637	20%	7	hold	0	0.0	0	0	168.61
2025-07-23	6607	22%	18	hold	0	0.0	0	0	168.61
2025-07-24	6701	22%	19	hold	0	0.0	0	0	168.61
2025-07-25	6707	22%	24	hold	0	0.0	0	0	168.61
2025-07-28	6730	22%	19	hold	0	0.0	0	0	168.61
2025-07-29	6774	21%	14	hold	0	0.0	0	0	168.61

Date	Index	IV	Rank	Act	Pos	Γ(¥M)	Δ	Vega	NAV(¥M)
2025-07-30	6718	21%	10	hold	0	0.0	0	0	168.61
2025-07-31	6661	20%	7	hold	0	0.0	0	0	168.61
2025-08-01	6670	18%	1	hold	0	0.0	0	0	168.61
2025-08-04	6740	18%	3	hold	0	0.0	0	0	168.61
2025-08-05	6787	20%	10	hold	0	0.0	0	0	168.61
2025-08-06	6861	20%	6	hold	0	0.0	0	0	168.61
2025-08-07	6862	22%	25	hold	0	0.0	0	0	168.61
2025-08-08	6838	20%	11	hold	0	0.0	0	0	168.61
2025-08-11	6944	22%	23	hold	0	0.0	0	0	168.61
2025-08-12	6964	20%	10	hold	0	0.0	0	0	168.61
2025-08-13	7064	21%	21	hold	0	0.0	0	0	168.61
2025-08-14	6976	21%	18	hold	0	0.0	0	0	168.61
2025-08-15	7118	23%	33	hold	0	0.0	0	0	168.61
2025-08-18	7238	28%	67	hold	0	0.0	0	0	168.61
2025-08-19	7243	26%	60	hold	0	0.0	0	0	168.61
2025-08-20	7305	28%	69	hold	0	0.0	0	0	168.61
2025-08-21	7253	28%	65	hold	0	0.0	0	0	168.61
2025-08-22	7363	27%	61	hold	0	0.0	0	0	168.61
2025-08-25	7478	29%	72	hold	0	0.0	0	0	168.61
2025-08-26	7476	28%	64	hold	0	0.0	0	0	168.61
2025-08-27	7337	28%	65	hold	0	0.0	0	0	168.61
2025-08-28	7447	28%	67	hold	0	0.0	0	0	168.61
2025-08-29	7439	28%	62	hold	0	0.0	0	0	168.61
2025-09-01	7501	27%	60	hold	0	0.0	0	0	168.61
2025-09-02	7314	28%	67	hold	0	0.0	0	0	168.61
2025-09-03	7207	27%	58	hold	0	0.0	0	0	168.61
2025-09-04	7041	28%	66	hold	0	0.0	0	0	168.61
2025-09-05	7246	24%	46	hold	0	0.0	0	0	168.61
2025-09-08	7311	30%	80	sell	2	-3.9	0	0	168.61
2025-09-09	7226	25%	46	hold	2	-4.0	-1380	-2698685	168.61
2025-09-10	7230	29%	71	hold	2	-4.2	-1382	-2561364	168.61
2025-09-11	7400	24%	44	hold	2	-4.2	8	-2321355	168.61
2025-09-12	7423	22%	25	hold	2	-4.2	239	-2061201	168.61
2025-09-15	7416	30%	79	hold	2	-5.2	447	-1457537	168.61
2025-09-16	7484	26%	54	hold	2	-5.3	447	-1457537	168.61
2025-09-17	7555	26%	55	hold	2	-5.4	447	-1457537	168.61
2025-09-18	7476	26%	52	hold	2	-5.3	447	-1457537	168.61
2025-09-19	7438	25%	46	hold	0	0.0	0	0	169.29
2025-09-22	7489	26%	53	hold	0	0.0	0	0	169.29
2025-09-23	7408	25%	47	hold	0	0.0	0	0	169.29

Date	Index	IV	Rank	Act	Pos	Γ(¥M)	Δ	Vega	NAV(¥M)
2025-09-24	7534	23%	33	hold	0	0.0	0	0	169.29
2025-09-25	7507	23%	33	hold	0	0.0	0	0	169.29
2025-09-26	7398	23%	30	hold	0	0.0	0	0	169.29
2025-09-29	7498	22%	21	hold	0	0.0	0	0	169.29
2025-09-30	7575	21%	14	hold	0	0.0	0	0	169.29
2025-10-09	7648	20%	10	hold	0	0.0	0	0	169.29
2025-10-10	7534	21%	13	hold	0	0.0	0	0	169.29
2025-10-13	7520	31%	82	sell	2	-3.9	0	0	169.29
2025-10-14	7373	25%	44	hold	2	-3.8	-327	-1121554	169.29
2025-10-15	7483	23%	31	hold	2	-3.9	-327	-1121554	169.29
2025-10-16	7402	24%	41	hold	2	-3.8	-327	-1121554	169.29
2025-10-17	7185	27%	56	hold	0	0.0	0	0	168.77
2025-10-20	7239	26%	54	hold	0	0.0	0	0	168.77
2025-10-21	7344	24%	37	hold	0	0.0	0	0	168.77
2025-10-22	7312	24%	36	hold	0	0.0	0	0	168.77
2025-10-23	7308	23%	31	hold	0	0.0	0	0	168.77
2025-10-24	7419	21%	17	hold	0	0.0	0	0	168.77
2025-10-27	7495	22%	25	hold	0	0.0	0	0	168.77
2025-10-28	7479	22%	20	hold	0	0.0	0	0	168.77
2025-10-29	7569	22%	18	hold	0	0.0	0	0	168.77
2025-10-30	7485	22%	19	hold	0	0.0	0	0	168.77
2025-10-31	7507	22%	18	hold	0	0.0	0	0	168.77
2025-11-03	7538	21%	16	hold	0	0.0	0	0	168.77
2025-11-04	7436	22%	23	hold	0	0.0	0	0	168.77
2025-11-05	7465	21%	17	hold	0	0.0	0	0	168.77
2025-11-06	7552	20%	6	hold	0	0.0	0	0	168.77
2025-11-07	7542	19%	5	hold	0	0.0	0	0	168.77
2025-11-10	7563	20%	10	hold	0	0.0	0	0	168.77
2025-11-11	7541	21%	19	hold	0	0.0	0	0	168.77
2025-11-12	7486	20%	9	hold	0	0.0	0	0	168.77
2025-11-13	7591	21%	17	hold	0	0.0	0	0	168.77
2025-11-14	7503	22%	22	hold	0	0.0	0	0	168.77
2025-11-17	7523	25%	55	hold	0	0.0	0	0	168.77
2025-11-18	7448	21%	20	hold	0	0.0	0	0	168.77
2025-11-19	7387	22%	24	hold	0	0.0	0	0	168.77
2025-11-20	7340	21%	21	hold	0	0.0	0	0	168.77
2025-11-21	7068	24%	43	hold	0	0.0	0	0	168.77
2025-11-24	7156	22%	31	hold	0	0.0	0	0	168.77
2025-11-25	7250	21%	13	hold	0	0.0	0	0	168.77
2025-11-26	7248	20%	8	hold	0	0.0	0	0	168.77

Date	Index	IV	Rank	Act	Pos	Γ(¥M)	Δ	Vega	NAV(¥M)
2025-11-27	7257	20%	7	hold	0	0.0	0	0	168.77
2025-11-28	7334	18%	2	hold	0	0.0	0	0	168.77
2025-12-01	7387	25%	61	hold	0	0.0	0	0	168.77
2025-12-02	7313	24%	52	hold	0	0.0	0	0	168.77
2025-12-03	7248	19%	5	hold	0	0.0	0	0	168.77
2025-12-04	7249	18%	3	hold	0	0.0	0	0	168.77
2025-12-05	7342	17%	0	hold	0	0.0	0	0	168.77
2025-12-08	7423	18%	4	hold	0	0.0	0	0	168.77
2025-12-09	7381	20%	10	hold	0	0.0	0	0	168.77
2025-12-10	7408	21%	18	hold	0	0.0	0	0	168.77
2025-12-11	7312	18%	2	hold	0	0.0	0	0	168.77
2025-12-12	7371	16%	0	hold	0	0.0	0	0	168.77
2025-12-15	7309	20%	11	hold	0	0.0	0	0	168.77
2025-12-24	7506	20%	9	hold	0	0.0	0	0	168.77
2025-12-25	7579	19%	6	hold	0	0.0	0	0	168.77
2025-12-26	7606	19%	5	hold	0	0.0	0	0	168.77
2025-12-29	7594	20%	14	hold	0	0.0	0	0	168.77
2025-12-30	7597	20%	17	hold	0	0.0	0	0	168.77
2025-12-31	7595	19%	8	hold	0	0.0	0	0	168.77
2026-01-05	7754	21%	27	hold	0	0.0	0	0	168.77
2026-01-06	7865	23%	46	hold	0	0.0	0	0	168.77
2026-01-07	7906	23%	44	hold	0	0.0	0	0	168.77
2026-01-08	7972	23%	45	hold	0	0.0	0	0	168.77
2026-01-09	8129	24%	54	hold	0	0.0	0	0	168.77
2026-01-12	8357	30%	94	sell	2	-3.9	0	0	168.77
2026-01-13	8203	26%	69	hold	2	-3.8	161	-1631094	168.77
2026-01-14	8257	27%	77	hold	2	-3.8	161	-1631094	168.77
2026-01-15	8241	25%	68	hold	2	-3.8	161	-1631094	168.77
2026-01-16	8233	24%	54	hold	0	0.0	0	0	169.08
2026-01-19	8266	23%	46	hold	0	0.0	0	0	169.08
2026-01-20	8183	21%	23	hold	0	0.0	0	0	169.08
2026-01-21	8248	21%	21	hold	0	0.0	0	0	169.08
2026-01-22	8309	22%	32	hold	0	0.0	0	0	169.08
2026-01-23	8471	25%	69	hold	0	0.0	0	0	169.08
2026-01-26	8365	26%	73	hold	0	0.0	0	0	169.08
2026-01-27	8382	26%	75	hold	0	0.0	0	0	169.08
2026-01-28	8400	25%	71	hold	0	0.0	0	0	169.08
2026-01-29	8332	25%	67	hold	0	0.0	0	0	169.08
2026-01-30	8255	26%	77	hold	0	0.0	0	0	169.08
2026-02-02	7975	31%	95	sell	2	-4.0	0	0	169.08

Date	Index	IV	Rank	Act	Pos	Γ (¥M)	Δ	Vega	NAV(¥M)
2026-02-03	8209	26%	73	hold	2	-3.8	1063	-5819870	169.08
2026-02-04	8207	25%	65	hold	2	-3.9	1084	-5629803	169.08
2026-02-05	8068	25%	71	hold	2	-4.3	234	-5778482	169.08
2026-02-06	8052	25%	67	hold	2	-4.5	130	-5597892	169.08
2026-02-09	8234	25%	65	hold	2	-4.5	1484	-4401438	169.08
2026-02-10	8250	23%	44	hold	2	-4.5	1666	-4059681	169.08
2026-02-11	8240	24%	56	hold	2	-4.8	1676	-3838490	169.08
2026-02-12	8315	24%	60	hold	2	-4.3	2284	-3108256	169.08
2026-02-13	8205	23%	50	hold	2	-5.5	1614	-3413713	169.08
2026-02-24	8300	24%	54	hold	0	0.0	0	0	170.13
2026-02-25	8426	22%	44	hold	0	0.0	0	0	170.13
2026-02-26	8491	22%	38	hold	0	0.0	0	0	170.13
2026-02-27	8561	21%	30	hold	0	0.0	0	0	170.13
2026-03-02	8477	22%	42	hold	0	0.0	0	0	170.13
2026-03-03	8142	27%	87	sell	2	-3.9	0	0	170.13
2026-03-04	8095	28%	88	sell	4	-8.0	-44	-4930632	170.13
2026-03-05	8171	23%	50	hold	4	-8.2	660	-9452441	170.13
2026-03-06	8249	21%	25	hold	4	-8.1	1643	-8759756	170.13

Table 3: Daily Positions & Greeks (complete record)

6.3 Individual Trade Log

Table 4 presents all 305 individual trades. Each row shows entry/exit dates, option type, strike, IV at entry, number of contracts, premium collected, option payoff, hedge P&L, and total P&L.

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2022-09-05	2022-09-16	C	6800	20%	25	226	0	+638	+864
2022-09-05	2022-09-16	P	6800	29%	37	516	1179	-267	-931
2022-09-21	2022-10-21	C	6500	17%	38	473	0	+536	+1009
2022-09-21	2022-10-21	P	6500	28%	50	1052	338	+553	+1267
2022-10-10	2022-10-21	C	6000	28%	40	439	1729	-1278	-2568
2022-10-10	2022-10-21	P	6000	32%	46	633	0	+679	+1312
2022-10-11	2022-10-21	C	6000	24%	33	350	1427	-1030	-2107
2022-10-11	2022-10-21	P	6000	32%	44	510	0	+577	+1087
2022-10-17	2022-10-21	C	6500	23%	18	90	0	+31	+121
2022-10-17	2022-10-21	P	6500	30%	24	228	162	-51	+14
2022-10-31	2022-11-18	C	6300	29%	50	811	1792	-1185	-2166
2022-10-31	2022-11-18	P	6300	31%	50	876	0	+726	+1602
2022-08-23	2023-03-17	P	7200	33%	50	3016	2318	-304	+393
2023-10-23	2023-11-17	C	5700	19%	44	383	2197	-1854	-3668
2023-10-23	2023-11-17	P	5700	25%	50	884	0	+847	+1731

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2023-11-09	2023-11-17	C	6100	12%	14	64	139	-85	-161
2023-11-09	2023-11-17	P	6100	20%	24	170	0	+104	+274
2023-11-13	2023-11-17	C	6100	12%	12	70	119	-50	-99
2023-11-13	2023-11-17	P	6100	21%	19	65	0	+39	+104
2023-11-14	2023-12-15	C	6200	11%	26	203	0	+253	+456
2023-11-14	2023-12-15	P	6200	22%	50	788	1242	-582	-1036
2023-11-28	2023-12-15	C	6100	10%	18	145	0	+229	+375
2023-11-28	2023-12-15	P	6100	20%	35	286	519	-256	-489
2023-11-30	2023-12-15	C	6100	10%	17	77	0	+150	+227
2023-11-30	2023-12-15	P	6100	21%	34	371	505	-157	-290
2023-12-01	2023-12-15	C	6100	10%	16	106	0	+180	+286
2023-12-01	2023-12-15	P	6100	19%	30	221	445	-212	-436
2023-12-04	2023-12-15	C	6100	10%	14	73	0	+144	+216
2023-12-04	2023-12-15	P	6100	24%	34	312	505	-226	-418
2023-12-05	2023-12-15	C	6000	14%	18	95	0	+104	+199
2023-12-05	2023-12-15	P	6000	25%	34	340	165	+12	+188
2023-12-06	2023-12-15	C	6000	13%	17	110	0	+127	+237
2023-12-06	2023-12-15	P	6000	22%	29	204	140	-27	+36
2023-12-07	2023-12-15	C	6000	16%	20	140	0	+134	+275
2023-12-07	2023-12-15	P	6000	19%	23	129	111	-10	+7
2023-12-11	2023-12-15	C	6100	18%	15	51	0	+77	+129
2023-12-11	2023-12-15	P	6100	20%	17	106	252	-119	-265
2023-12-26	2024-01-19	C	5700	17%	39	318	0	+412	+730
2023-12-26	2024-01-19	P	5700	20%	46	638	1808	-1000	-2169
2023-12-27	2024-01-19	C	5700	15%	33	298	0	+405	+702
2023-12-27	2024-01-19	P	5700	21%	45	516	1769	-1086	-2339
2024-01-04	2024-01-19	C	5800	15%	27	180	0	+235	+415
2024-01-04	2024-01-19	P	5800	20%	35	346	1726	-1272	-2651
2024-01-05	2024-01-19	C	5700	17%	29	193	0	+257	+450
2024-01-05	2024-01-19	P	5700	20%	34	337	1336	-885	-1884
2024-01-08	2024-01-19	C	5500	18%	29	279	0	+530	+809
2024-01-08	2024-01-19	P	5500	36%	50	567	965	-384	-782
2024-01-09	2024-01-19	C	5600	18%	27	124	0	+273	+397
2024-01-09	2024-01-19	P	5600	31%	46	633	1348	-593	-1308
2024-01-10	2024-01-19	C	5500	20%	28	216	0	+441	+657
2024-01-10	2024-01-19	P	5500	29%	41	381	791	-234	-644
2024-01-11	2024-01-19	C	5600	20%	26	191	0	+309	+500
2024-01-11	2024-01-19	P	5600	26%	33	257	967	-571	-1281
2024-01-12	2024-01-19	C	5600	19%	24	117	0	+235	+352
2024-01-12	2024-01-19	P	5600	26%	32	296	938	-498	-1140

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2024-01-15	2024-01-19	C	5600	19%	19	53	0	+173	+226
2024-01-15	2024-01-19	P	5600	33%	31	301	908	-441	-1048
2024-01-16	2024-02-19	C	5500	14%	37	432	0	+690	+1122
2024-01-16	2024-02-19	P	5500	27%	50	751	2352	-770	-2371
2024-01-17	2024-02-19	C	5400	14%	36	304	0	+637	+941
2024-01-17	2024-02-19	P	5400	36%	50	1105	1852	-106	-853
2024-01-18	2024-02-19	C	5400	19%	48	500	0	+889	+1389
2024-01-18	2024-02-19	P	5400	36%	50	1129	1852	-67	-790
2024-01-19	2024-02-19	C	5300	18%	46	513	0	+995	+1508
2024-01-19	2024-02-19	P	5300	33%	50	935	1352	+274	-143
2024-01-22	2024-02-19	C	5000	23%	50	625	148	+655	+1132
2024-01-22	2024-02-19	P	5000	60%	50	1547	0	+1066	+2613
2024-01-23	2024-02-19	C	5100	23%	50	565	0	+715	+1280
2024-01-23	2024-02-19	P	5100	40%	50	1072	352	+913	+1633
2024-01-24	2024-02-19	C	5100	25%	50	775	0	+880	+1655
2024-01-24	2024-02-19	P	5100	37%	50	814	352	+754	+1216
2024-01-25	2024-02-19	C	5300	25%	50	717	0	+803	+1520
2024-01-25	2024-02-19	P	5300	29%	50	685	1352	-179	-846
2024-01-26	2024-02-19	C	5300	22%	50	507	0	+623	+1130
2024-01-26	2024-02-19	P	5300	33%	50	902	1352	-2	-452
2024-01-29	2024-02-19	C	5100	22%	49	593	0	+694	+1287
2024-01-29	2024-02-19	P	5100	38%	50	765	352	+660	+1073
2024-01-30	2024-02-19	C	5000	26%	50	545	148	+438	+835
2024-01-30	2024-02-19	P	5000	46%	50	1006	0	+1023	+2029
2024-01-31	2024-02-19	C	4800	32%	50	618	1148	-153	-683
2024-01-31	2024-02-19	P	4800	45%	50	918	0	+1334	+2252
2024-02-01	2024-02-19	C	4800	29%	50	463	1148	-238	-923
2024-02-01	2024-02-19	P	4800	44%	50	964	0	+1422	+2386
2024-02-02	2024-02-19	C	4600	31%	50	500	2148	-1080	-2728
2024-02-02	2024-02-19	P	4600	49%	50	923	0	+1411	+2334
2024-02-06	2024-02-19	C	4600	43%	50	645	2148	-1471	-2974
2024-02-06	2024-02-19	P	4600	40%	50	623	0	+787	+1410
2024-02-07	2024-02-19	C	4800	35%	50	526	1148	-665	-1287
2024-02-07	2024-02-19	P	4800	28%	45	374	0	+474	+849
2024-02-08	2024-02-19	C	5000	29%	42	349	124	-77	+148
2024-02-08	2024-02-19	P	5000	27%	39	315	0	+72	+387
2024-02-19	2024-03-15	C	5100	33%	50	729	2278	-1692	-3242
2024-02-19	2024-03-15	P	5100	47%	50	1393	0	+1120	+2513
2024-02-20	2024-03-15	C	5100	26%	50	559	2278	-1679	-3398
2024-02-20	2024-03-15	P	5100	38%	50	1100	0	+1059	+2159

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2024-02-21	2024-03-15	C	5100	25%	50	586	2278	-1620	-3312
2024-02-21	2024-03-15	P	5100	39%	50	1030	0	+989	+2019
2024-02-22	2024-03-15	C	5200	29%	50	649	1778	-1148	-2278
2024-02-22	2024-03-15	P	5200	36%	50	1027	0	+1005	+2032
2024-02-23	2024-03-15	C	5200	31%	50	855	1778	-974	-1897
2024-02-23	2024-03-15	P	5200	35%	50	780	0	+812	+1592
2024-02-26	2024-03-15	C	5300	28%	50	559	1278	-649	-1369
2024-02-26	2024-03-15	P	5300	37%	50	955	0	+937	+1892
2024-02-27	2024-03-15	C	5400	30%	50	702	778	-177	-253
2024-02-27	2024-03-15	P	5400	33%	50	769	0	+730	+1499
2024-02-28	2024-03-15	C	5200	34%	50	625	1778	-1307	-2460
2024-02-28	2024-03-15	P	5200	42%	50	1024	0	+806	+1830
2024-02-29	2024-03-15	C	5300	34%	50	853	1278	-700	-1125
2024-02-29	2024-03-15	P	5300	36%	50	665	0	+395	+1060
2024-03-01	2024-03-15	C	5400	33%	50	705	778	-397	-470
2024-03-01	2024-03-15	P	5400	37%	50	771	0	+399	+1170
2024-03-04	2024-03-15	C	5400	31%	50	673	778	-327	-432
2024-03-04	2024-03-15	P	5400	44%	50	741	0	+333	+1074
2024-03-05	2024-03-15	C	5400	28%	43	390	669	-406	-686
2024-03-05	2024-03-15	P	5400	47%	50	890	0	+452	+1342
2024-03-06	2024-03-15	C	5400	29%	42	379	654	-384	-659
2024-03-06	2024-03-15	P	5400	41%	50	733	0	+437	+1170
2024-03-07	2024-03-15	C	5300	29%	40	376	1023	-700	-1347
2024-03-07	2024-03-15	P	5300	39%	50	599	0	+453	+1052
2024-03-08	2024-03-15	C	5400	22%	29	157	451	-311	-606
2024-03-08	2024-03-15	P	5400	31%	39	410	0	+326	+736
2024-03-11	2024-03-15	C	5500	31%	30	171	167	-118	-114
2024-03-11	2024-03-15	P	5500	34%	32	302	0	+161	+463
2024-03-12	2024-04-19	C	5500	21%	50	775	0	+726	+1501
2024-03-12	2024-04-19	P	5500	30%	50	1035	1178	-285	-428
2024-03-13	2024-04-19	C	5500	20%	50	775	0	+812	+1587
2024-03-13	2024-04-19	P	5500	28%	50	905	1178	-336	-609
2024-03-14	2024-04-19	C	5500	20%	50	678	0	+713	+1391
2024-03-14	2024-04-19	P	5500	28%	50	975	1178	-256	-459
2024-03-15	2024-04-19	C	5600	22%	50	681	0	+655	+1336
2024-03-15	2024-04-19	P	5600	27%	50	1007	1678	-591	-1262
2024-03-18	2024-04-19	C	5600	23%	50	931	0	+881	+1812
2024-03-18	2024-04-19	P	5600	26%	50	730	1678	-831	-1779
2024-03-19	2024-04-19	C	5600	21%	50	737	0	+764	+1501
2024-03-19	2024-04-19	P	5600	27%	50	823	1678	-744	-1599

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2024-03-20	2024-04-19	C	5700	21%	50	614	0	+651	+1265
2024-03-20	2024-04-19	P	5700	27%	50	959	2178	-1067	-2286
2024-03-21	2024-04-19	C	5700	21%	50	600	0	+649	+1249
2024-03-21	2024-04-19	P	5700	27%	50	954	2178	-1063	-2287
2024-03-22	2024-04-19	C	5600	20%	50	641	0	+716	+1357
2024-03-22	2024-04-19	P	5600	27%	50	826	1678	-734	-1586
2024-03-25	2024-04-19	C	5500	22%	50	577	0	+550	+1127
2024-03-25	2024-04-19	P	5500	29%	50	889	1178	-304	-593
2024-03-26	2024-04-19	C	5400	21%	50	739	0	+674	+1413
2024-03-26	2024-04-19	P	5400	31%	50	734	678	-153	-97
2024-03-27	2024-04-19	C	5300	27%	50	655	0	+131	+786
2024-03-27	2024-04-19	P	5300	36%	50	1025	178	+227	+1074
2024-03-28	2024-04-19	C	5400	24%	50	605	0	+346	+951
2024-03-28	2024-04-19	P	5400	31%	50	851	678	-130	+42
2024-03-29	2024-04-19	C	5400	22%	49	684	0	+494	+1178
2024-03-29	2024-04-19	P	5400	29%	50	629	678	-271	-320
2024-04-01	2024-04-19	C	5600	23%	46	454	0	+389	+844
2024-04-01	2024-04-19	P	5600	27%	50	767	1678	-895	-1806
2024-04-02	2024-04-19	C	5500	22%	42	513	0	+449	+962
2024-04-02	2024-04-19	P	5500	28%	50	570	1178	-661	-1269
2024-04-03	2024-04-19	C	5500	20%	37	345	0	+328	+673
2024-04-03	2024-04-19	P	5500	28%	50	626	1178	-594	-1146
2024-04-08	2024-04-19	C	5400	20%	31	233	0	+193	+426
2024-04-08	2024-04-19	P	5400	35%	50	647	678	-263	-294
2024-04-09	2024-04-19	C	5500	21%	32	207	0	+195	+402
2024-04-09	2024-04-19	P	5500	32%	48	622	1131	-540	-1049
2024-04-10	2024-04-19	C	5400	22%	32	192	0	+105	+297
2024-04-10	2024-04-19	P	5400	33%	49	627	664	-230	-267
2024-04-11	2024-04-19	C	5400	21%	29	171	0	+110	+281
2024-04-11	2024-04-19	P	5400	31%	42	449	570	-228	-348
2024-04-12	2024-04-19	C	5300	17%	23	167	0	+79	+246
2024-04-12	2024-04-19	P	5300	28%	37	238	132	-86	+21
2024-04-15	2024-04-19	C	5300	25%	25	128	0	+5	+132
2024-04-15	2024-04-19	P	5300	37%	36	315	128	-8	+179
2024-04-16	2024-05-17	C	5100	26%	50	710	2316	-1702	-3308
2024-04-16	2024-05-17	P	5100	39%	50	1216	0	+1013	+2229
2024-04-17	2024-05-17	C	5300	23%	50	682	1316	-804	-1438
2024-04-17	2024-05-17	P	5300	34%	50	1036	0	+686	+1722
2024-04-18	2024-05-17	C	5300	23%	50	676	1316	-805	-1445
2024-04-18	2024-05-17	P	5300	35%	50	1037	0	+688	+1725

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2024-04-19	2024-05-17	C	5300	22%	50	565	1316	-871	-1622
2024-04-19	2024-05-17	P	5300	35%	50	1089	0	+742	+1831
2024-04-22	2024-05-17	C	5200	22%	50	736	1816	-1156	-2236
2024-04-22	2024-05-17	P	5200	34%	50	790	0	+623	+1413
2024-04-23	2024-05-17	C	5200	21%	50	618	1816	-1253	-2451
2024-04-23	2024-05-17	P	5200	34%	50	851	0	+687	+1538
2024-04-24	2024-05-17	C	5300	22%	50	627	1316	-788	-1477
2024-04-24	2024-05-17	P	5300	29%	50	745	0	+605	+1350
2024-04-29	2024-05-17	C	5500	26%	50	783	316	+70	+537
2024-04-29	2024-05-17	P	5500	25%	50	500	0	+206	+706
2024-05-06	2024-05-17	C	5600	23%	36	346	0	+160	+505
2024-05-06	2024-05-17	P	5600	28%	43	441	158	+11	+294
2024-05-13	2024-05-17	C	5500	23%	21	134	133	-53	-51
2024-05-13	2024-05-17	P	5500	30%	28	162	0	+55	+217
2024-05-28	2024-06-21	C	5300	15%	38	435	0	+420	+856
2024-05-28	2024-06-21	P	5300	30%	50	678	1223	-802	-1348
2024-06-25	2024-07-19	C	4800	21%	50	673	107	+462	+1028
2024-06-25	2024-07-19	P	4800	31%	50	633	0	+300	+933
2024-07-08	2024-07-19	C	4700	23%	41	295	498	-237	-440
2024-07-08	2024-07-19	P	4700	32%	50	529	0	+371	+900
2024-07-10	2024-07-19	C	4800	23%	37	216	79	-17	+119
2024-07-10	2024-07-19	P	4800	30%	48	475	0	+184	+659
2024-07-15	2024-07-19	C	4800	18%	20	104	43	+7	+68
2024-07-15	2024-07-19	P	4800	28%	30	127	0	-7	+120
2024-08-05	2024-08-16	C	4700	30%	50	450	0	+76	+526
2024-08-05	2024-08-16	P	4700	34%	50	596	222	-28	+346
2024-08-06	2024-08-16	C	4700	24%	43	443	0	+218	+661
2024-08-06	2024-08-16	P	4700	31%	50	365	222	-213	-70
2024-02-05	2024-09-27	C	4300	21%	50	1541	4182	-3513	-6154
2024-02-05	2024-09-27	P	4300	51%	50	3264	0	+2703	+5967
2024-09-27	2024-10-18	C	5200	58%	50	1298	2747	-1681	-3131
2024-09-27	2024-10-18	P	5200	17%	41	474	0	+1602	+2076
2024-09-30	2024-10-18	C	5700	100%	50	2550	247	+158	+2461
2024-09-30	2024-10-18	P	5700	37%	50	901	0	+1630	+2531
2024-10-08	2024-10-18	C	6200	91%	50	1884	0	+1308	+3192
2024-10-08	2024-10-18	P	6200	89%	50	1803	2253	-616	-1066
2024-10-09	2024-10-18	C	5700	57%	50	1099	247	+156	+1008
2024-10-09	2024-10-18	P	5700	62%	50	1025	0	+404	+1429
2024-10-10	2024-10-18	C	5700	50%	50	742	247	-6	+489
2024-10-10	2024-10-18	P	5700	51%	50	970	0	+615	+1585

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2024-10-11	2024-10-18	C	5400	57%	50	906	1747	-1104	-1945
2024-10-11	2024-10-18	P	5400	56%	50	792	0	+658	+1450
2024-10-14	2024-10-18	C	5600	42%	39	417	583	-307	-473
2024-10-14	2024-10-18	P	5600	41%	38	334	0	+258	+592
2024-10-15	2024-11-15	C	5600	31%	50	796	2628	-2061	-3893
2024-10-15	2024-11-15	P	5600	38%	50	1430	0	+1395	+2825
2024-10-16	2024-11-15	C	5600	33%	50	883	2628	-1993	-3738
2024-10-16	2024-11-15	P	5600	38%	50	1367	0	+1350	+2717
2024-10-17	2024-11-15	C	5600	32%	50	788	2628	-2052	-3892
2024-10-17	2024-11-15	P	5600	38%	50	1410	0	+1403	+2813
2024-10-18	2024-11-15	C	5700	41%	50	1436	2128	-1127	-1819
2024-10-18	2024-11-15	P	5700	39%	50	1095	0	+951	+2046
2024-10-21	2024-11-15	C	5900	41%	50	1172	1128	-371	-327
2024-10-21	2024-11-15	P	5900	44%	50	1422	0	+1174	+2596
2024-10-22	2024-11-15	C	5900	39%	50	1161	1128	-312	-279
2024-10-22	2024-11-15	P	5900	42%	50	1282	0	+1096	+2378
2024-10-23	2024-11-15	C	5900	36%	50	1093	1128	-294	-329
2024-10-23	2024-11-15	P	5900	41%	50	1164	0	+1050	+2214
2024-10-24	2024-11-15	C	5900	34%	50	917	1128	-416	-627
2024-10-24	2024-11-15	P	5900	37%	50	1134	0	+1123	+2257
2024-10-25	2024-11-15	C	6000	36%	50	1003	628	+116	+492
2024-10-25	2024-11-15	P	6000	35%	50	1041	0	+1054	+2095
2024-10-28	2024-11-15	C	6100	35%	50	926	128	+590	+1389
2024-10-28	2024-11-15	P	6100	39%	50	1088	0	+973	+2061
2024-10-29	2024-11-15	C	6000	34%	50	848	628	+95	+315
2024-10-29	2024-11-15	P	6000	36%	50	955	0	+986	+1941
2024-10-30	2024-11-15	C	6000	34%	50	925	628	+187	+485
2024-10-30	2024-11-15	P	6000	38%	50	901	0	+907	+1808
2024-10-31	2024-11-15	C	6100	36%	50	936	128	+642	+1450
2024-10-31	2024-11-15	P	6100	40%	50	929	0	+838	+1767
2024-11-01	2024-11-15	C	5900	41%	50	1044	1128	-293	-376
2024-11-01	2024-11-15	P	5900	44%	50	921	0	+840	+1761
2024-11-04	2024-11-15	C	6100	44%	50	829	128	+377	+1079
2024-11-04	2024-11-15	P	6100	45%	50	1049	0	+860	+1909
2024-11-05	2024-11-15	C	6300	46%	50	884	0	+903	+1787
2024-11-05	2024-11-15	P	6300	43%	50	972	872	+309	+408
2024-11-06	2024-11-15	C	6300	37%	46	672	0	+971	+1642
2024-11-06	2024-11-15	P	6300	39%	48	747	838	+271	+181
2024-11-07	2024-11-15	C	6400	37%	42	601	0	+1027	+1628
2024-11-07	2024-11-15	P	6400	37%	43	593	1180	-89	-675

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2024-11-08	2024-11-15	C	6400	34%	37	498	0	+968	+1466
2024-11-08	2024-11-15	P	6400	36%	39	448	1070	-103	-725
2024-11-11	2024-11-15	C	6600	26%	20	123	0	+409	+532
2024-11-11	2024-11-15	P	6600	41%	33	409	1566	-757	-1914
2024-11-18	2024-12-20	C	6000	31%	50	1058	1359	-667	-968
2024-11-18	2024-12-20	P	6000	36%	50	1301	0	+991	+2292
2024-11-19	2024-12-20	C	6100	29%	50	1141	859	-135	+147
2024-11-19	2024-12-20	P	6100	36%	50	1173	0	+692	+1865
2024-11-22	2024-12-20	C	6000	25%	50	954	1359	-655	-1060
2024-11-22	2024-12-20	P	6000	39%	50	1179	0	+694	+1873
2024-11-25	2024-12-20	C	6100	27%	50	762	859	-429	-526
2024-11-25	2024-12-20	P	6100	39%	50	1342	0	+740	+2082
2024-12-02	2024-12-20	C	6300	27%	47	749	0	+252	+1002
2024-12-02	2024-12-20	P	6300	36%	50	951	141	+80	+889
2024-12-04	2024-12-20	C	6200	28%	48	734	344	-66	+324
2024-12-04	2024-12-20	P	6200	36%	50	906	0	+304	+1210
2025-01-02	2025-01-17	C	5800	29%	50	680	208	+445	+917
2025-01-02	2025-01-17	P	5800	36%	50	825	0	+709	+1534
2025-01-03	2025-01-17	C	5600	32%	50	778	1208	-381	-811
2025-01-03	2025-01-17	P	5600	33%	50	640	0	+779	+1419
2025-01-06	2025-01-17	C	5600	34%	50	685	1208	-439	-962
2025-01-06	2025-01-17	P	5600	36%	50	676	0	+796	+1472
2025-01-13	2025-01-17	C	5600	36%	34	224	821	-434	-1031
2025-01-13	2025-01-17	P	5600	38%	36	396	0	+594	+990
2025-03-10	2025-03-21	C	6500	14%	18	135	0	+244	+379
2025-03-10	2025-03-21	P	6500	35%	47	691	444	-91	+156
2025-04-07	2025-04-18	C	5500	43%	50	825	1658	-1026	-1859
2025-04-07	2025-04-18	P	5500	91%	50	1724	0	+765	+2489
2025-04-08	2025-04-18	C	5500	38%	50	779	1658	-967	-1847
2025-04-08	2025-04-18	P	5500	54%	50	893	0	+650	+1543
2025-04-09	2025-04-18	C	5700	31%	44	401	579	-325	-503
2025-04-09	2025-04-18	P	5700	50%	50	1000	0	+531	+1531
2025-04-10	2025-04-18	C	5800	29%	36	330	114	-9	+207
2025-04-10	2025-04-18	P	5800	40%	50	710	0	+210	+920
2025-04-11	2025-04-18	C	5900	27%	31	218	0	+91	+309
2025-04-11	2025-04-18	P	5900	36%	43	588	294	-13	+281
2025-04-14	2025-04-18	C	5900	20%	18	131	0	+120	+250
2025-04-14	2025-04-18	P	5900	41%	36	298	246	-163	-111
2025-09-08	2025-09-19	C	7300	17%	20	192	276	-106	-190
2025-09-08	2025-09-19	P	7300	32%	38	582	0	+281	+863

Entry	Exit	C/P	K	IV	N	Prem(¥K)	Pay(¥K)	Hdg(¥K)	PnL(¥K)
2025-10-13	2025-10-17	C	7500	19%	13	92	0	+236	+328
2025-10-13	2025-10-17	P	7500	33%	23	216	723	-341	-848
2026-01-12	2026-01-16	C	8400	44%	27	363	0	+153	+516
2026-01-12	2026-01-16	P	8400	32%	20	270	335	-133	-198
2026-02-02	2026-02-24	C	8000	29%	41	822	1229	-677	-1084
2026-02-02	2026-02-24	P	8000	36%	49	1272	0	+852	+2125
2026-03-03	2026-03-06	C	8100	27%	35	746	521	-206	+19
2026-03-03	2026-03-06	P	8100	29%	38	672	0	+188	+859
2026-03-04	2026-03-06	C	8100	26%	33	578	491	-283	-196
2026-03-04	2026-03-06	P	8100	31%	40	830	0	+284	+1114

Table 4: Individual Trade Log (complete record)

7. Risk Analysis

7.1 Gamma Exposure

The portfolio gamma represents the strategy's exposure to large market moves. A short gamma position loses money when the underlying makes a large move in either direction, with losses accelerating quadratically. The ¥200M gamma limit ensures that even a 5% index move generates a gamma-related loss of at most ¥10M (10% of capital), which is within institutional risk tolerance.

7.2 Key Risk Events

The backtest period includes several significant events for the CSI 1000: (1) The September-October 2024 rally, when the CSI 1000 surged over 30% in two weeks on policy stimulus announcements, creating extreme stress for short volatility positions. (2) The gradual decline from 7,000 to 4,500 in 2023–2024, which increased IV and provided rich premium collection opportunities. (3) The recovery and stabilization in 2025–2026 as China's economy normalized.

7.3 Comparison with Unhedged Strategy

Without delta hedging, the strategy would have experienced significantly larger drawdowns during directional market moves. The hedge converts the strategy's risk profile from directional (delta) to convexity (gamma/vega), isolating the pure volatility premium. The cost of hedging reduces total return but dramatically improves the Sharpe ratio and reduces maximum drawdown.

8. Discussion

The strategy's strong performance (16.5% annualized, Sharpe 0.94) confirms that the variance risk premium exists in China's CSI 1000 options market and is harvestable with appropriate risk controls. Several factors contribute to this result:

- **Retail investor demand:** Chinese options markets have significant retail participation, and retail investors tend to overpay for options as lottery-like instruments, inflating IV above fundamental levels.
- **Hedging demand:** Institutional investors (mutual funds, insurance companies) buy puts for portfolio protection, pushing up put prices and the overall VRP.
- **Short-selling constraints:** Limited short-selling in A-shares means that bearish views are disproportionately expressed through options, further inflating option prices.
- **Higher underlying volatility:** The CSI 1000's higher volatility compared to CSI 300 generates larger absolute VRP, making the strategy more profitable.

The gamma-based risk control framework is particularly well-suited for the Chinese market, where sudden policy-driven rallies (e.g., September 2024) can cause extreme short-term moves. By limiting gamma rather than delta, the strategy naturally reduces position sizes when options are expensive (high gamma at-the-money), providing an additional layer of protection.

9. Conclusion

This paper presents the first comprehensive backtest of a systematic volatility selling strategy on CSI 1000 index options, achieving an annualized return of 16.5% with a Sharpe ratio of 0.94 over 3.5 years. The gamma-controlled, delta-hedged framework demonstrates that the variance risk premium is robust in China's small-cap options market and can be harvested with institutional-grade risk management.

Future research directions include: (1) extending to CSI 300 and CSI 500 options for cross-index comparison; (2) incorporating stochastic volatility models for more accurate delta hedging; (3) adding vega hedging using options of different maturities; and (4) testing in a live trading environment with realistic transaction costs and margin.

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Appendix A: Strategy Parameters

Parameter	Value	Description
IV Threshold	80th percentile	Sell when IV rank > 80
Per-Trade Gamma	¥2,000,000	Max gamma per option sale
Portfolio Gamma	¥200,000,000	Stop selling at this gamma
Option Selection	Near-month ATM	Shortest expiry, $ K/S-1 < 2\%$
Hedge Instrument	CSI 1000 futures (IM)	Delta offset
Hedge Frequency	Daily	Recompute delta each day
Max Contracts/Side	50	Per trade limit
Risk-Free Rate	2.5%	China govt bond yield
Multiplier	100	CFFEX contract spec
Capital	¥100,000,000	Initial investment

Table A1: Complete Strategy Parameters

Appendix B: Delta Hedging with Index Futures

The delta hedge is implemented using CSI 1000 index futures (IM contracts) on CFFEX. For a portfolio of short options with aggregate delta Δ , we maintain a futures position of $-\Delta$ contracts (long if $\Delta < 0$, short if $\Delta > 0$). The hedge is rebalanced daily.

The hedge P&L for each position is computed as:

$$\text{Hedge P\&L} = \sum_t (-\delta_t \times M \times N \times S_t \times r_t)$$

where δ_t is the option delta at time t , M is the contract multiplier (100), N is the number of contracts, S_t is the index level, and r_t is the daily index return. The negative sign reflects that we take the opposite position in futures.