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Luxstell Hedge Fund (PAMM) ①②③ Sharpe Ratio

＜Calculation Details＞

Return, Annualized Return (1 year), Return (Annualized)

The return indicates the profit earned by investors holding the fund during the period. If an investor continued to manage their investment by adding the dividends to the principal without receiving them, it displays in percentage terms how much the reference price (based on reinvested dividends) has increased or decreased.

The Annualized Return displays the return over the target period, converted to an annualized rate.

・Return (Cumulative Return)
{nΠ1(1+Monthly Return n)} - 1 n=6,12,36,60,120, set future months

・Annualized Return (1 year), Return (Annualized) (Yearly Cumulative Return)
(1+above cumulative return)^(12/n) - 1 n=6, 12, 36, 60, 120, set future months

Annualized Return based on Dividend Receipt

It displays, in percentage terms, how much the reference price, inclusive of dividends, has risen or fallen. It can be said to be a return that closely reflects the actual gains or losses experienced by investors who purchased the fund during their holding period. The return over the target period is displayed as an annualized rate.

＜Calculation Details＞

{(Ending Reference Price + Total Dividend for Calculation Period) / Beginning Reference Price} ^ (12/n) - 1, where n=6, 12, 36, 60, 120 Risk, Annualized Risk (1 year), Risk (Annualized)
The calculation represents the variability of the reference price. It's a standard deviation value statistically processed from the past reference price returns at fixed intervals (daily, weekly, monthly). A mutual fund with a larger value for this calculation is more likely to experience significant price increases or decreases. Conversely, funds with lower risk can be expected to have gentler price movements. For 1 year, the calculation is based on monthly data, and for periods exceeding 3 years, it's derived from monthly data.
The Annualized Risk displays the risk over the target period, converted to an annualized rate.

＜Calculation Details＞

/ Risk (1 year), Annualized Risk (1 year) (i.e., Annual Standard Deviation for 1 year)
√‾(nΣ monthly return^2 - (Σ weekly return)^2) / n(n-1) × √12, where n=12
・Annualized Risk for 3 years to preset (i.e., Annual Standard Deviation for 3 years to preset)
√‾(nΣ monthly return^2 - (Σ monthly return)^2) / n(n-1) × √12, where n=36, 60, 120, number of months

Sharpe Ratio, Sharpe Ratio (1 year), Sharpe Ratio (Annualized)

It's a metric that indicates how much return was earned for the risk taken in the management. A higher value suggests that a larger return was achieved with a relatively lower risk.
This metric is used when searching for efficiently managed funds. For 1 year, the calculation is based on monthly data, and for periods exceeding 3 years, it's derived from monthly data.
The Annualized Sharpe Ratio displays the Sharpe ratio over the target period, converted to an annualized rate.

＜Calculation Details＞

Sharpe Ratio (1 year), Annualized Sharpe Ratio (1 year) (i.e., Annual Sharpe Ratio)
{(Σ weekly return)/n - RFRmn} / {√(nΣ monthly return^2 - (Σ monthly return)^2) / n(n-1)} × √12, where n=12
RFRmn: Derived using the Federal Funds Rate (FF rate) at the end of each of the recent 52 weeks. Calculated as:
RFRmn = {((1 + CALLt-12 /100)^(1/12) + ... + (1 + CALLt-1 /100)^(1/12))} / 12 - 1

Annualized Sharpe Ratio from 3 years to preset (i.e., Annual Sharpe Ratio for 3 years to preset)
{(Σ monthly return)/n - RFRmn} / {√(nΣ monthly return^2 - (Σ monthly return)^2) / n(n-1)} × √12, where n=36, 60, 120, number of months
RFRmn: Derived using the Federal Funds Rate (FF rate) at the end of each of the recent n months. Calculated as:
RFRmn = {((1 + CALLt-n /100)^(1/12) + ... + (1 + CALLt-1 /100)^(1/12))} / n - 1

＜Reference Materials & Data＞ Bloomberg, Quick, St. Louis Fed

1. Sirius (Profit-seeking type, Return: High, Risk: Medium)

Key points of Sirius (PAMM・EA System).

Currency/Strategy: 5 currencies/3 Strategies (USD/JPY, GBP/JPY, EUR/JPY, GBP/USD, EUR/USD)

・Expected return rate: 40%-60%

・Expected maximum drawdown range: 5%-20%

・Overall period Sharpe ratio: 14.59

・Portfolio management of 5 EAs (backtesting & simulation) – 10-year backtest result: Average annual interest (simple interest) 41.9% (maximum drawdown: 5.6%).

*Conducted under stricter conditions than actual market environments.

Year	Monthly Federal Funds Rate											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	0.1%	0.2%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
2014	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
2015	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
2016	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%
2017	0.7%	0.7%	0.8%	0.9%	0.9%	1.0%	1.2%	1.2%	1.2%	1.2%	1.2%	1.3%
2018	1.4%	1.4%	1.5%	1.7%	1.7%	1.8%	1.9%	1.9%	2.0%	2.2%	2.2%	2.3%
2019	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.1%	2.0%	1.8%	1.6%	1.6%
2020	1.6%	1.6%	0.7%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
2021	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
2022	0.1%	0.1%	0.2%	0.3%	0.8%	1.2%	1.7%	2.3%	2.6%	3.1%	3.8%	4.1%
2023	4.3%	4.6%	4.7%	4.8%	5.1%	5.1%	5.1%					

Year	Monthly Return (Monthly Profit/Loss ÷ Principal: $10,000)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	5.6%	8.1%	6.2%	10.1%	8.2%	4.6%	4.0%	2.7%	1.2%	5.4%	7.2%	3.8%
2014	2.9%	5.2%	0.5%	5.5%	3.5%	0.7%	0.1%	-1.4%	4.3%	4.5%	2.6%	-0.4%
2015	7.1%	2.3%	2.0%	10.8%	5.4%	5.5%	8.4%	4.7%	4.3%	5.3%	5.2%	3.5%
2016	4.3%	3.9%	5.3%	8.8%	6.7%	7.2%	9.8%	3.1%	2.4%	6.9%	6.7%	4.2%
2017	3.3%	1.9%	4.1%	2.2%	4.0%	3.2%	8.3%	2.7%	0.7%	0.9%	3.6%	2.7%
2018	4.2%	5.8%	-0.3%	4.1%	2.8%	3.1%	1.8%	3.6%	1.9%	0.7%	3.9%	0.7%
2019	1.1%	2.4%	2.4%	1.4%	2.2%	0.4%	1.3%	1.0%	1.7%	-2.1%	-0.5%	4.4%
2020	4.7%	1.6%	4.8%	2.4%	7.1%	1.9%	2.7%	6.4%	3.1%	-1.9%	1.9%	0.6%
2021	2.3%	1.7%	6.0%	0.6%	0.8%	4.8%	0.1%	2.0%	1.7%	1.7%	4.6%	-1.0%
2022	0.0%	2.7%	5.2%	1.2%	4.4%	6.9%	6.3%	4.9%	6.8%	0.2%	3.4%	5.0%
2023	1.7%	3.7%	7.4%	0.9%	2.4%	2.9%	-1.0%					

Year	①Number of months	②Return	③Standard Deviation	④Rf	⑤Sharpe Ratio
2013	12	5.59%	2.55%	0.01%	7.59
2014	12	2.33%	2.37%	0.01%	3.40
2015	12	5.37%	2.48%	0.01%	7.48
2016	12	5.78%	2.27%	0.03%	8.75
2017	12	3.14%	1.96%	0.08%	5.41
2018	12	2.69%	1.78%	0.15%	4.95
2019	12	1.32%	1.64%	0.18%	2.40
2020	12	2.95%	2.51%	0.03%	4.04
2021	12	2.10%	2.06%	0.01%	3.52
2022	12	3.90%	2.42%	0.14%	5.38
2023	7	2.56%	2.33%	0.23%	3.48
Total	127	3.46%	2.61%	0.08%	14.59

＜Formula: Quick Reference＞

①Number of months to calculate	:	n
②Return	:	ΣMonthly Return / n
③Standard Deviation (with Bessel's correction)	:	√{ (nΣ(Monthly Return^2) - (ΣMonthly Return)^2) / n(n-1) }
④Rf	:	Σ{ (1 + Monthly Federal Funds Rate)^(1 / n) - 1 } / n
⑤Sharpe Ratio	:	{ (①Return - ④Rf) / ②Standard Deviation } × √n

２. Vega (Stability-focused type, Return: Medium-High, Risk: Medium-Low)

Key points of Vega(PAMM・EA System)

Currency/Strategy: 3 currencies/3 Strategies (USD/JPY, GBP/JPY, EUR/JPY)

Expected return rate: 25%-40%

Expected maximum drawdown range: 3%-15%

Overall period Sharpe ratio: 12.20

Portfolio management of 5 EAs (backtesting & simulation) – 10-year backtest result: Average annual interest (simple interest) 32.0% (maximum drawdown: 4.3%).

*Conducted under stricter conditions than actual market environments.

Year	Monthly Federal Funds Rate											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	4.7%	9.7%	1.1%	2.9%	9.5%	2.9%	0.7%	0.9%	1.6%	4.1%	6.2%	6.5%
2014	0.7%	1.6%	4.6%	3.1%	1.6%	0.6%	1.0%	-2.3%	1.5%	5.0%	4.2%	3.4%
2015	6.0%	4.9%	2.8%	5.4%	4.8%	2.5%	2.2%	3.4%	-2.8%	2.2%	3.3%	7.2%
2016	3.7%	3.7%	3.1%	4.8%	1.7%	6.8%	2.1%	0.8%	0.7%	4.3%	8.2%	3.5%
2017	3.4%	2.1%	3.0%	2.6%	1.9%	3.9%	2.4%	2.3%	3.4%	-0.1%	1.6%	2.3%
2018	1.7%	2.1%	0.6%	1.4%	1.0%	1.2%	2.0%	0.8%	2.6%	0.0%	2.6%	2.3%
2019	2.4%	0.9%	1.8%	1.3%	1.0%	-0.8%	0.8%	4.3%	2.2%	-0.4%	1.8%	5.6%
2020	1.1%	0.5%	7.0%	2.9%	1.6%	3.6%	0.9%	2.7%	2.2%	-0.7%	-0.8%	1.0%
2021	3.8%	4.1%	0.9%	1.1%	2.9%	4.2%	-0.4%	4.9%	0.5%	-0.4%	3.3%	0.1%
2022	0.8%	2.9%	7.8%	2.2%	4.4%	7.2%	1.2%	3.4%	10.2%	1.0%	2.5%	6.4%
2023	1.3%	1.4%	6.6%	-1.8%	1.1%	1.4%	-0.6%					

Year	①Number of months	②Return	③Standard Deviation	④Rf	⑤Sharpe Ratio
2013	12	4.23%	3.17%	0.01%	4.61
2014	12	2.09%	2.06%	0.01%	3.50
2015	12	3.49%	2.55%	0.01%	4.73
2016	12	3.59%	2.26%	0.03%	5.47
2017	12	2.40%	1.05%	0.08%	7.67
2018	12	1.54%	0.84%	0.15%	5.69
2019	12	1.75%	1.80%	0.18%	3.02
2020	12	1.84%	2.12%	0.03%	2.95
2021	12	2.09%	1.96%	0.01%	3.67
2022	12	4.18%	3.05%	0.14%	4.58
2023	7	1.37%	2.07%	0.23%	1.92
Total	127	2.65%	2.37%	0.08%	12.20

＜Formula: Quick Reference＞

①Number of months to calculate	:	n
②Return	:	ΣMonthly Return / n
③Standard Deviation (with Bessel's correction)	:	√{ (nΣ(Monthly Return^2) - (ΣMonthly Return)^2) / n(n-1) }
④Rf	:	Σ{ (1 + Monthly Federal Funds Rate)^(1 / n) - 1 } / n
⑤Sharpe Ratio	:	{ (①Return - ④Rf) / ②Standard Deviation } × √n

３. Betelgeuse (Balanced type, Return: Medium, Risk: Low)

Key points of Betelgeuse (PAMM・EA System)

Currency/Strategy: 2 currencies/3 Strategies (USD/JPY, GBP/JPY)

Expected return rate: 15%-30%

Expected maximum drawdown range: 1%-10%

Overall period Sharpe ratio: 5.98

Portfolio management of 5 EAs (backtesting & simulation) – 10-year backtest result: Average annual interest (simple interest) 23.2% (maximum drawdown: 4%).

*Conducted under stricter conditions than actual market environments.

Year	Monthly Federal Funds Rate											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	2.6%	1.5%	3.7%	1.3%	1.0%	-0.4%	0.4%	1.1%	2.4%	0.9%	2.8%	2.6%
2014	2.3%	2.1%	1.6%	1.1%	1.6%	2.3%	2.1%	0.9%	-1.0%	2.6%	1.0%	4.1%
2015	-0.8%	6.1%	3.3%	3.7%	1.5%	0.6%	2.2%	1.7%	2.0%	1.9%	3.9%	4.9%
2016	2.7%	1.6%	3.7%	1.9%	2.9%	0.8%	0.6%	2.0%	2.7%	-0.3%	1.0%	1.1%
2017	3.4%	-0.5%	0.1%	-0.4%	1.7%	0.2%	1.0%	1.6%	1.7%	1.6%	1.3%	0.5%
2018	2.7%	-0.3%	1.2%	1.8%	1.7%	-1.3%	1.2%	3.0%	1.9%	1.1%	0.9%	2.9%
2019	0.4%	1.3%	6.1%	2.4%	0.4%	2.8%	-0.5%	-0.1%	1.4%	1.0%	-2.9%	-0.2%
2020	1.7%	3.2%	0.9%	-0.9%	0.8%	3.3%	0.1%	4.5%	0.5%	0.4%	2.5%	0.9%
2021	1.0%	2.4%	3.6%	4.8%	2.5%	4.3%	4.4%	1.8%	3.6%	1.4%	1.1%	10.7%
2022	-2.8%	0.3%	1.6%	-0.7%	1.1%	0.0%	-1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
2023	20.2%	21.5%	28.0%	20.4%	24.4%	15.2%	15.5%					

Year	①Number of months	②Return	③Standard Deviation	④Rf	⑤Sharpe Ratio
2013	12	1.65%	1.18%	0.01%	4.83
2014	12	1.72%	1.21%	0.01%	4.92
2015	12	2.58%	1.89%	0.01%	4.71
2016	12	1.73%	1.16%	0.03%	5.05
2017	12	1.02%	1.10%	0.08%	2.95
2018	12	1.40%	1.28%	0.15%	3.36
2019	12	0.99%	2.17%	0.18%	1.30
2020	12	1.48%	1.58%	0.03%	3.17
2021	12	3.48%	2.65%	0.01%	4.53
2022	12	-0.16%	1.12%	0.14%	-0.91
2023	7	20.75%	11.20%	0.23%	6.34
Total	127	2.65%	4.83%	0.08%	5.98

＜Formula: Quick Reference＞	
①Number of months to calculate	n
②Return	ΣMonthly Return / n
③Standard Deviation (with Bessel's correction)	√{ (nΣ(Monthly Return^2) - (ΣMonthly Return)^2) / n(n-1) }
④Rf	Σ{ (1 + Monthly Federal Funds Rate)^(1 / n) - 1 } / n
⑤Sharpe Ratio	{ (①Return - ④Rf) / ②Standard Deviation } × √n