



NAV 28-Dec-22: 121.198

INVESTMENT TEAM

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QUADRIGA RHO INVESTMENTS

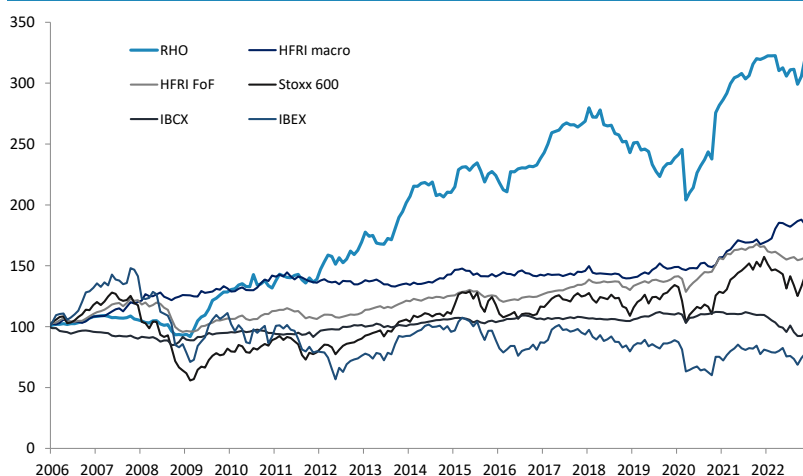
The fund's objective is to return net positive returns every year, regardless the behavior of traditional assets. To achieve it, the fund allocates to six different strategies: Active, Relative Value, Macro Selection, Micro Selection, Special Situations and Deep Value. The strategies are focused on finding cheap assets with asymmetric profiles.

Dec 2022 Update

I have always wondered how late into the year is still acceptable to wish people a happy new year. I have surveyed a cross section of employees in the office and have also researched into the unfathomable depths of that whimsical and veritably biased oracle that is the internet, and there does not seem to be a clear consensus on the matter. I have therefore unilaterally decided that, since so far most of this newsletter audience is governed by the Gregorian calendar (although I am half-tempted to start using the Julian calendar as an act of iconoclastic rebellion as well as an original excuse for missing the occasional MS Teams meeting), is appropriate to send our wishes of a very happy and prosperous 2023 to all the existing and prospective investors, as well as all stakeholders in the fund. A great thanks is particularly due to you all for devoting your invaluable time, not only to be bored to tears monthly by my verbose prose, but more importantly in terms of your contribution to the success of our RHO multi-Strategy fund as well as for your support over the last few years. (cont...)

Fund Facts

Fund size	EUR 101mm
Structure	SIF
Domicile	Luxembourg
Class	A / B
Mgmt. Fee	1% / 2%
Perf. Fee	20% / 20%
Min. Investment	500,000€ / 125,000€
NAV Currency	EUR
Liquidity	Weekly
ISIN	LU1610886332 / LU2403116234
Bloomberg Code	RHOSIFA LX / RHOSIFB LX
Custodian	Société Générale SS

Historical Evolution vs Indexes (% Net) (*)**Monthly Returns (% Net) (*)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2006	1.2%	0.7%	0.0%	0.4%	-0.6%	0.6%	0.1%	0.8%	0.8%	0.9%	1.8%	1.2%	8.2%
2007	0.3%	0.3%	0.3%	-0.6%	-1.0%	0.1%	-0.3%	-0.2%	0.4%	1.3%	-2.2%	-0.7%	-2.4%
2008	-0.8%	-1.3%	-0.4%	1.8%	0.1%	-2.6%	-1.0%	0.5%	-5.1%	-3.3%	0.4%	-0.5%	-11.8%
2009	0.7%	-2.0%	6.5%	7.1%	3.0%	1.4%	4.7%	6.2%	1.4%	2.2%	1.9%	0.0%	38.0%
2010	1.6%	0.5%	2.3%	0.8%	-1.8%	0.0%	7.4%	-6.0%	0.7%	2.1%	-3.1%	-1.4%	2.5%
2011	4.7%	3.8%	-1.0%	-0.9%	-0.2%	1.4%	0.5%	-3.1%	-1.9%	3.1%	-2.5%	1.7%	5.4%
2012	5.9%	4.2%	3.6%	-0.7%	-4.1%	3.5%	-2.6%	1.9%	4.2%	-1.8%	2.3%	4.1%	22.1%
2013	4.8%	-1.9%	0.4%	-3.6%	-0.4%	-0.2%	2.9%	-0.7%	5.3%	5.2%	2.5%	3.7%	19.0%
2014	2.6%	4.0%	0.0%	1.1%	0.3%	-0.9%	1.1%	-5.1%	0.6%	-1.1%	1.9%	-0.1%	4.2%
2015	2.2%	6.5%	0.9%	0.2%	-1.3%	1.6%	1.1%	-2.8%	-4.0%	3.0%	0.9%	-1.4%	6.7%
2016	-2.7%	-2.6%	-0.8%	7.9%	-0.1%	1.1%	0.4%	-0.1%	0.6%	-0.2%	0.6%	2.3%	6.2%
2017	2.1%	2.9%	3.7%	0.4%	0.4%	1.6%	0.6%	-0.6%	0.0%	-0.7%	0.9%	0.9%	12.8%
2018	4.1%	-2.7%	-0.1%	2.2%	-4.4%	-0.4%	0.2%	-2.6%	-0.4%	-2.3%	0.2%	-4.0%	-9.9%
2019	4.5%	0.1%	-2.5%	0.3%	-0.8%	-4.4%	-2.5%	-1.8%	3.2%	1.5%	0.1%	1.8%	-0.7%
2020	1.2%	1.8%	-16.9%	2.9%	2.0%	5.7%	2.5%	2.2%	2.7%	-2.4%	16.0%	2.3%	18.3%
2021	1.6%	1.8%	2.7%	1.6%	0.4%	0.7%	-1.5%	0.9%	3.1%	1.4%	-0.2%	0.4%	13.8%
2022	0.5%	0.0%	0.0%	-3.8%	0.7%	-2.2%	1.7%	0.1%	-4.0%	2.2%	4.8%	-1.9%	-2.0%

(*) Since inception - Rho SIL until June 2017, since June 2017, Rho SIF Multi-strategy

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Comparative Risk / Return

	RETURNS (CAGR)			VOLATILITY		
	10 years	3 years	Since inception	10 years	3 years	Since inception
Rho Investments	6.37%	9.67%	6.97%	11.04%	15.22%	10.20%
Stoxx 600	4.27%	2.61%	1.87%	13.92%	18.51%	14.97%
Ibex	0.08%	-3.66%	-1.55%	18.10%	23.80%	19.93%

Returns (% Net)

2022YTD	-2.00%
CAGR*	6.97%
Dec 2022	-1.87%

Risk / Return

Volatility*	10.20%
Sharpe Ratio*	0.68
Sortino Ratio	1.21
Parametric VaR 1-d	1.85%

Top Five Positions (Delta exposure as % of NAV / Market value at risk as % of NAV)

SX5E May-23 4200 calls	5.6% / 0.3%
Grifols A shares	-5.1% / -5.1%
Grifols B shares	5.0% / 5.0%
Santander shares	4.7% / 4.7%
EDF 7.5% PERP	3.6% / 3.6%

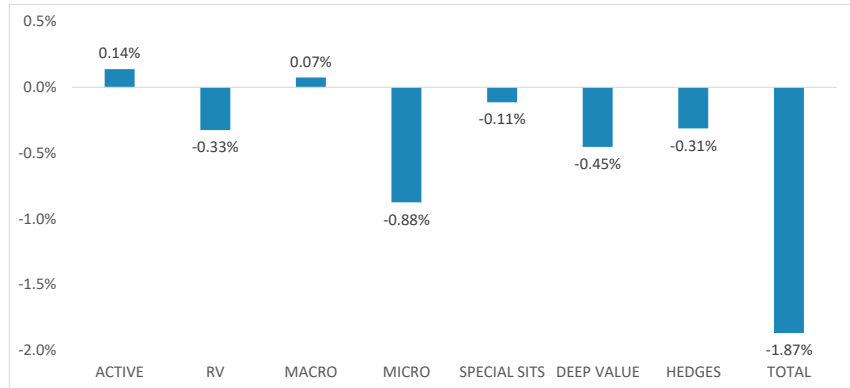
% Leverage

Gross	110.6%
Net	75.8%

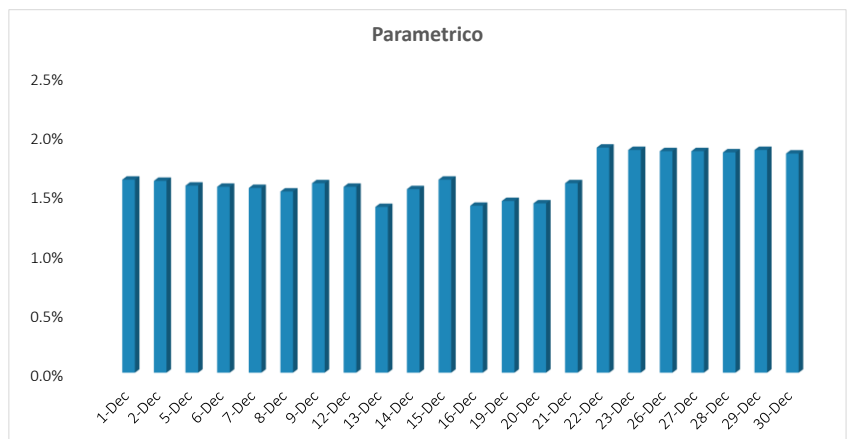
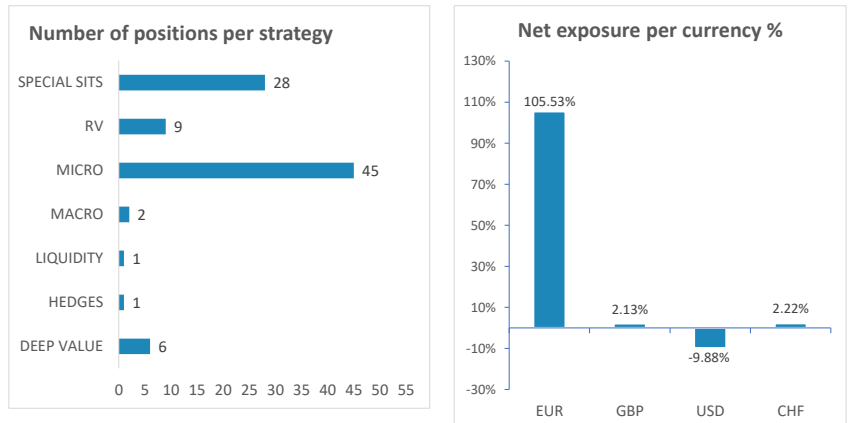
% of Gross Exposure per Strategy

Active	0.0%
Deep value	4.5%
Hedges	7.8%
Liquidity	14.7%
Macro	4.7%
Micro	43.3%
Relative value	17.6%
Special sits	7.5%

Performance attribution across strategies (% Gross)



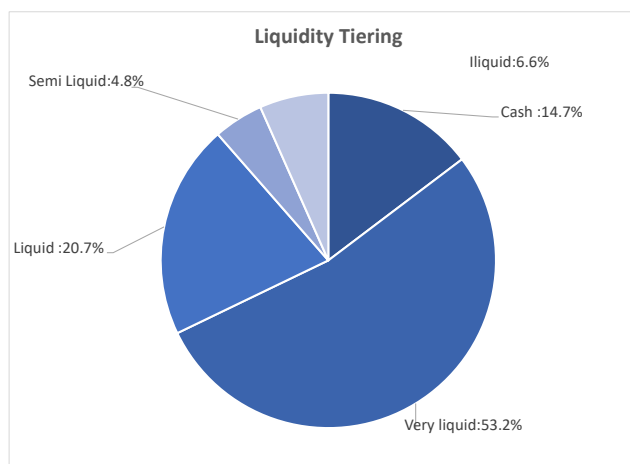
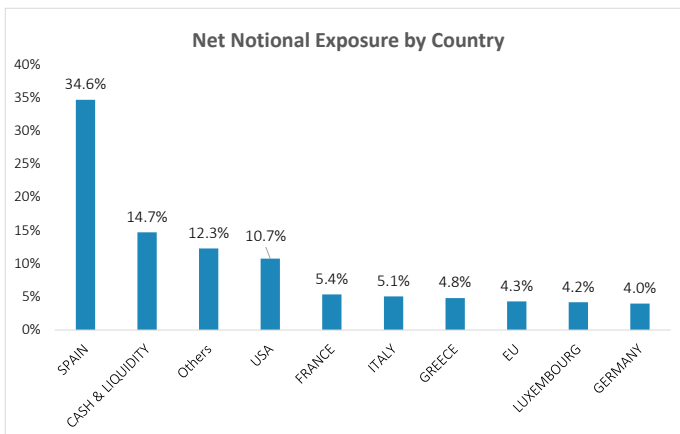
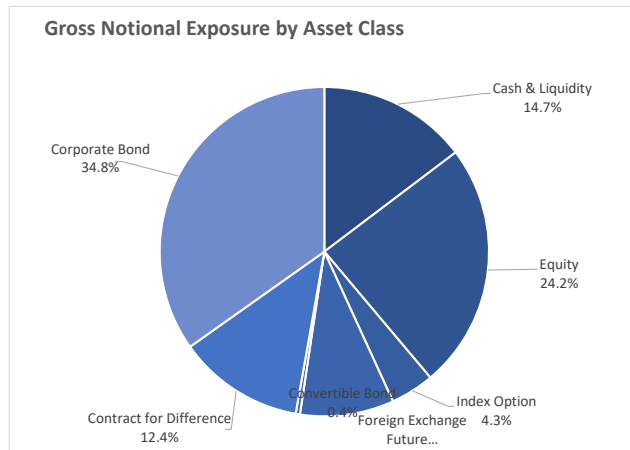
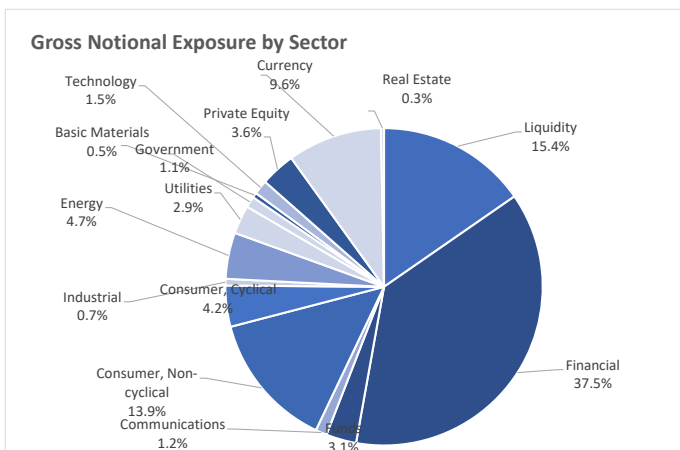
Risk Concentration and Distribution Metrics



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Risk Concentration and Distribution Metrics (2)



Dec 2022 Update (cont...)

(...cont) What started many years ago as an innovative strategy devised to manage the net worth of just the PMs of the fund, Quadriga partners, family and a few close friends, has been opened up over the last couple of years to the broader public, giving new investors access to a very successful and time-proved strategy, whilst helping the existing ones amplify their returns, as the fund (contrary to most industry peers) operates at sub-optimal capacity within the most idiosyncratic strategies underlying the fund. Last year RHO reached that arbitrary, yet significant, milestone of EUR 100mm AuM in its Luxembourg SIF fund, and 2023 begins with the launch (expected for the 25th of January) of a new long-only biased European Credit Opportunities UCITS fund to capitalize on Rho investment team's successful credit investment track-record within the multi-strategy umbrella, at a time of more abundant opportunities within the European credit space (should you be interested in more details about this exciting new opportunity please reach the Rho team or your Quadriga sales contact).

Now, moving on to performance in a now seemingly so distant December... The fund disappointingly generated a -1.9% net return in the month, which does however compare quite favorably vs equity markets. In the month the Eurostoxx 50 generated negative returns of -3.9%, the Ibex 35 -1.2% (-3.7% and -1% respectively including dividends), and the S&P and Nasdaq 100 -7.2% and -11.2% respectively (in USD terms). The comparison vs HY European markets is admittedly less flattering, in a month in which the total returns in the 5-year iTraxx Crossover CDS index were a mere -41bps. However disappointing the small negative performance on the month might be, the fund closes yet another year of strong outperformance of the broader market, and crucially does so with very controlled levels of volatility in such challenging and volatile markets as those experienced in 2022, another positive testament to the robustness of Rho's risk management processes. In a year where merely sitting on USD cash would have generated -5% total returns and extending duration in US Treasuries all the way to 2yr and 10yr would have brought negative (USD) returns of -10% and -20% respectively, the prospects of investment in equities would not have done much better (yet in relative risk terms did strongly outperform fixed income investments), with the MSCI EU returning -20%, the S&P 500 -23% and the MSCI EM -25%. Rho Investments closed the year with a net return of -1.9% which beats every single risk asset within its investment universe. Furthermore, throughout this challenging period Rho investments exhibited volatility levels which were anywhere between 35% and 50% of those associated with major European or US equity indices. Now, going back to the analysis of the fund's December returns, in terms of performance attribution, the bulk of weakness came unsurprisingly from Micro directional strategies, which is the underlying strategy bucket with the higher historical correlation vs the market underlying the fund, given that it has a long bias and positioning is predicated on value-driven single-asset (i.e. no associated relative value or hedge element) positioning. Within the bucket performance was driven by adverse mark-to-market in shares of Spanish renewable energy company Soltec (-0.2% contribution to total portfolio returns over NAV), in shares of Italian payment services company Nexi (-0.2%), shares of European airline Wizzair (-0.1%) and shares of Spanish wealthtech company Allfunds (-0.1%). The second largest contributor to negative returns in the month within the portfolio was Deep Value strategies (-0.4%), liquid investments within this very long-term and thematic bucket remain focused on the beleaguered US tele-health sector. Amwell stock contributed -0.2% to total returns as shares lost 23.5% of its value in the month, with Teladoc stock also losing -20% in the same period. We have used December weakness to add risk in both stocks as, at current valuations, we believe that themes of positive event risk and pressure from activist investors might emerge in both stocks providing a good floor to stock prices. Our stance has thus far been validated in the month of January where Amwell and Teladoc stocks have rebounded 40.5% and 17.5% respectively, levels at which we will explore resuming covered call writing strategies for part of our exposures (which we had suspended at depressed valuation levels) given extremely attractive levels of implied volatility (131.25% IV for a 2.5 sigma strike vs realized vol, corresponding to a USD 7.5 strike on Feb 2023 calls for Amwell stock as an example). (cont...)

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(...cont) Relative Value strategies (-0.3% return over NAV) saw negative performance driven by long Grifols pref shares vs short Grifols common stock, which yielded a return of -20bps in the month, and the underperformance of Santander over Caixabank (-0.20% contribution to NAV) in our delta neutral long-short positioning in these two Spanish banks' stocks. Special Situations (-0.1%) closed a disappointing year, where the dubious "highlight" was the full write down to zero our investments across senior unsecured debt of Spanish renewable energy EPC specialist Abengoa, a thesis that was full of promise and ticked all the asymmetry boxes of our MAC filter, yet encountered the imponderable of political interference and an inadequate domestic legal framework for corporate restructurings, where minority shareholders severely diluted in a fair equitization process can derail (in fact have every incentive to do so) a bank lenders' and bondholders'-led restructuring agreement. The post-mortem of this extremely unsuccessful investment is however very encouraging despite the negative results. First and foremost, it is a validation of our prudential risk management process in (potentially highly binary) restructurings and distressed debt, where the loss of the full amount of the investment proceeds has not had a significant impact in terms of overall portfolio drawdowns. Secondly constitutes a significant learning lesson in terms of factoring in political considerations whenever government cash injections are expected in a rescue plan, but which involve different government agencies at both regional and federal levels, and which are controlled by different political parties. Within a loss-making month for the bucket is worth highlighting the positive performance of our investment in the senior unsecured debt of French care homes operator Orpea (+0.1% return over NAV), where we remain extremely positive at the upside for the bond holders of the equity conversion and associated new-money optionality and we have recently opportunistically added to this exposure ahead of conversion, in which now constitutes our largest exposure in the bucket, standing however at a modest 2.7% of NAV (expected to grow to just over 4.5% post new equity contribution by debtholders). Finally on a positive note, despite the difficult investment environment in the month, more-actively traded exposures within the Active (tactical trading) and Macro buckets yielded positive performance. Macro strategies contributed 7bps towards overall performance as the fund recovered 43bps (in terms of overall NAV) in mark-to-market on the short position 3800 Dec 22 Eurostoxx 50 calls which was used to buy 4200 May 23 Eurostoxx 50 calls, which cost 39bps in terms of overall performance in the month, but constituted a very attractive exposure towards the beginning of the year in terms of risk-reward and market technical, which has been validated by the strong market rally seen so far in January. Finally, Active strategies (+10bps) benefited from very short-term tactical volatility trading in US stocks.

At risk of sounding boring, but since the strategic stance remains relatively undented, is worth adding below once again a bullet point summary of our broad strategic view:

- *Whilst the severity of potential tail events going into the European winter has increased, all these "grey swans" are very well flagged and known, and much doom and gloom has been hedged for and incorporated into asset prices*
- *We will see an increase in severe bear market squeezes in the next few months fueled by negative gamma and plain old FOMO across fund managers on any move higher*
- *Feels like the "pain trade" is a move higher in risky asset prices*
- *Once again, like we saw in 08, credit markets are clearly leading the way in terms of pricing recession and broader risks (including systemic and sovereign ones)*
- *Credit looks too cheap to stocks*
- *European stocks are starting to be attractively priced in terms of many metrics but crucially we have yet to see significant EPS downgrades across sectors and we believe this to be a potential catalyst to finally buy stocks on weakness with a meaningful level of conviction*

It is worth highlighting however that, given recent price action, we have decided to trim some of the risk in credit exposures within the Micro bucket, due to heavy levels of new supply and the attractiveness of credit new issue premia to be harvested, as well as gradually increase our risk budget allocation to relative value whilst reducing directional exposures.

Finally, and from the point of view of risk metrics, the fund continued to trim its delta-one market exposure on prudential grounds yet replacing that risk via options to position for a squeeze-driven January effect, given the technical considerations described in the bullet points above. As a result, we saw levels of net exposure come down from 91% at the end of November to 76% at the end of December. Likewise gross leverage came down from 1.7x at the end of November to 1.1x at the end of December. The picture from a statistical point of view, expressed as 1-day 99.5% confidence parametric VaR, shows VaR increasing from 1.6% at the end of November to 1.8% at the end of December as the fund added some "year-end credit bargains" to the Micro bucket to take advantage of dealers' RWA and balance sheet pressures, yet overall risk deployed did however decrease throughout the month. If we analyze average daily VaR utilization, we can see that it dropped from 1.9% average daily utilization during November to 1.65% during December.

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