AURUM

Hedge Fund Industry Deep Dive

H1 2023 Review

Inside this report:

In summary

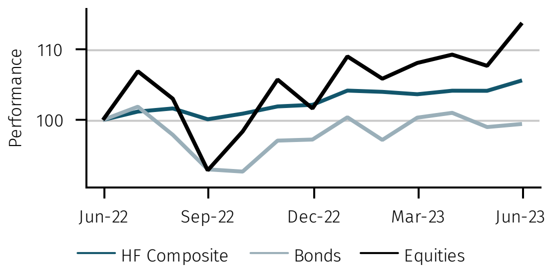
- The hedge fund industry* was up 3.4% in H1 23 with performance being heavily weighted to the start of Q1 and the end of Q2.
- The best performing strategies of 2022 have underperformed significantly in H1 23 as strategies with higher beta to risk assets have led the performance.
- Equity l/s and long biased were the top performers in H1, delivering 6.1% and 4.0 % respectively. These were the worst performing strategies in 2022.
- Five-year performance for hedge funds now stands at a CAR of +4.7%, comfortably outperforming bonds** (-1.3%) but behind equities*** (+5.6%).
- Dispersion between the top and bottom decile performing hedge funds has fallen significantly.

**HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.*
***Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD).*
****Equities = S&P Global BMI.*

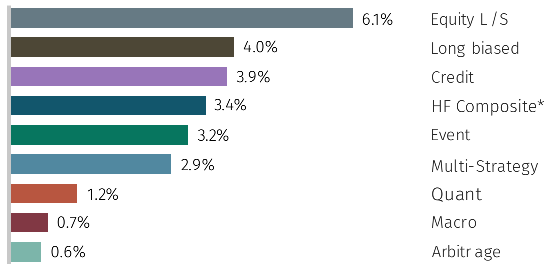
All figures and charts use asset weighted returns unless otherwise stated. All Hedge Fund data is sourced from Aurum Hedge Fund Data Engine. Data included in this report is dated as at 21st July 2023.

For definitions on how the Strategies and Sub-Strategies are defined please refer to https://www.aurum.com/hedge-fund-strategy-definitions/ , and for information on index methodology, weighting and composition please refer to https://www.aurum.com/aurum-strategy-engine/

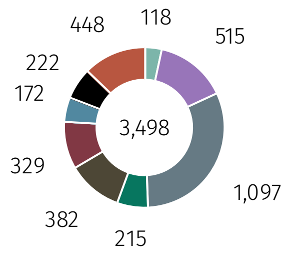
HF COMPOSITE VS INDICES (1 YR)



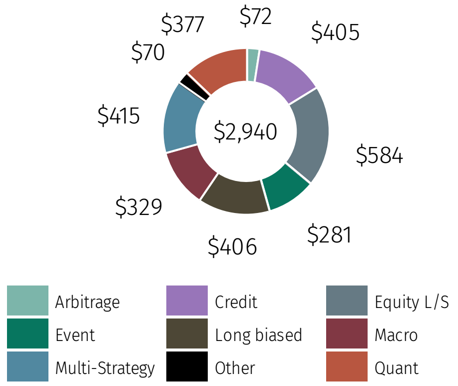
NET RETURN (H1)



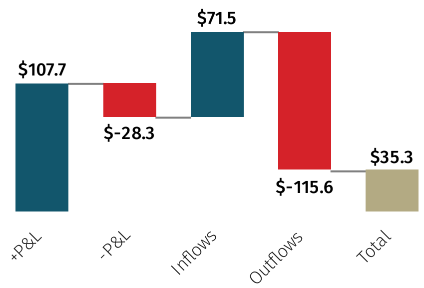
FUND COUNT – JUN 23



AUM ($BN) – JUN 23



AUM CHANGE $BN (H1)



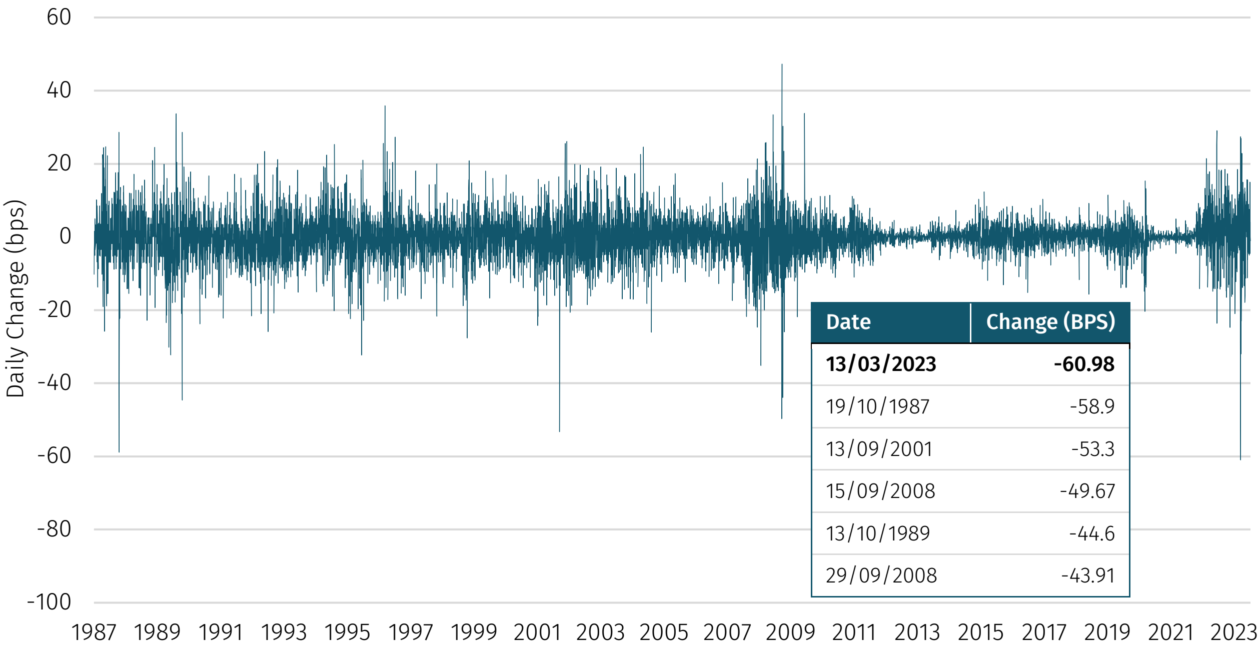
H1 2023 overview

So what happened in H1 2023? Oh, nothing much, just a banking crisis, 'AI mania', a narrow equity rally, and a last minute deal on the US debt ceiling. Anything else? Well inflation is under control... or maybe not. We may also have a recession... probably!

After a turbulent 2022, investors were hoping for a more stable year. January started on a positive note; US and EU growth improved, China reopened and inflation declined. Risk assets started the year with significant gains in both equities and credit, while US and EU government bond yields decreased. However, the rest of the first half of the year was anything but stable. February was a challenging month for markets and US inflationary concerns drove expectations for rate hikes from the Fed. March was marked by an unexpected banking crisis, which saw through regulatory intervention UBS acquire Credit Suisse for CHF 3 bn, while Silicon Valley Bank and Signature Bank experienced the second and third largest bank failures in US history. In efforts to stabilise the industry, US banks injected $30bn into First Republic Bank, and central banks coordinated global liquidity support.

In the run up to this banking crisis, there was a high conviction view, widely held by global macro hedge funds, that there would be a higher terminal interest rate in the US. This view had been a strong driver of returns throughout 2022 and into February 2023; many macro funds were exposed to a large short rates position at the front end of the curve. The data releases in February and Powell's congressional testimony put the possibility of a 50bps interest rate hike firmly on the table, strengthening the conviction in that trade. Unfortunately, the timing of the banking failures resulted in an exceptionally volatile month for those exposed to the trade, as the market shifted to the Fed pausing on the rate hike.

US 2Y TREASURY DAILY CHANGE (BPS)



Date	Change (BPS)
13/03/2023	**-60.98**
19/10/1987	-58.9
13/09/2001	-53.3
15/09/2008	-49.67
13/10/1989	-44.6
29/09/2008	-43.91

The chart above (source: Bloomberg) shows just how extreme the moves in the 2y Treasury Yield were in March. It was the largest daily move since 1982, larger than Black Monday in 1987, 9/11, and throughout the Global Financial Crisis (GFC).

Equity markets experienced a strong rally in H1 2023 (the "period") fuelled by several factors: the Fed paused rate hikes, robust US economic data releases and the resolution of the US debt ceiling standoff, which all boosted investor sentiment. Additionally, US GDP growth for the first quarter of 2023 was revised upwards, while the Eurozone remained in a technical recession.

> **The 2y Treasury Yield experienced the largest daily move since 1982 in March – larger than Black Monday in 1987, 9/11, and the Global Financial Crisis.**

Fixed income markets saw an increase in government bond yields. Inflation and GDP updates indicated expectations for further hikes, however, despite such concerns, headline inflation decreased in both the US and Eurozone during the period.

Several other noteworthy events unfolded over the first half of the year, including the Biden administration's suspension of the debt ceiling until 2025. Regulatory pressures intensified on digital assets and their service providers, with the SEC

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initiating lawsuits against several significant firms, arguing that certain cryptocurrencies should be classified as securities. The US and China engaged in meetings in efforts to ease tensions in their relationship.

Generative AI mania and the "most concentrated market ever".

Global equity markets enjoyed a significant rally in H1 2023, with the S&P Global BMI up 11.9% (source: Bloomberg). In the US it has been even better, with the S&P 500 up over 15%. However, under the surface, this rally was driven by just a handful of stocks. In fact, in a CNBC interview Bernstein analyst Toni Sacconaghi said, "this is the most concentrated market ever, about 90% of the returns since the beginning of the year were driven by just ten stocks in the S&P 500 and the contribution of those ten stocks have generated nine and half points of return so far this year."

> **With the rapid adoption of large language models such as ChatGPT, Google Bard and Bing AI, there has been a surge in interest in the stocks of anything AI related.**

During the period under review, the Nasdaq 100 was up nearly 40%. When you strip out seven of the biggest – primarily tech - stocks (Apple, Microsoft, Amazon, Google, Nvidia, Meta, and Tesla), the performance of the S&P 493 is only marginally up on the period. Meanwhile, the capitalisation-weighted returns of these seven companies is just under 60%! With the rapid adoption of large language models such as ChatGPT, Google Bard and Bing AI (which utilises GPT4 and the ability to combine with web-search for free), there has been a surge in interest in the stocks of anything AI related. Nvidia was up nearly 200% to the end of June, which reflects the market's perception of the pivotal role that Nvidia's technology will play in the rapid expansion of the AI space, many investors view it as a way to 'participate' in the future anticipated growth of the AI space. The purpose of this update is not to discuss the merits of AI, or whether some of the price action is justified; however, it was a clear contributing factor in the extremely narrow market rally, which has been difficult for diversified investors to navigate. It also created issues for investors that are typically reliant on instruments linked to markets like the S&P 500 for hedging purposes.

Inflation and interest rates, hard or soft landing?

There are a number of factors that kept inflation relatively high. In the US the labour market remains very tight and unemployment is relatively low by historical standards. On top of this there is an aging population and tighter control on migration (where in the past increased labour supply has helped restrict wage growth). Inflation is also above 2% targets in the Eurozone, the UK, Canada, Australia, New Zealand and Norway. Policy decisions during the COVID crisis, including extraordinary monetary and fiscal stimulus, as well as easing of credit, have been large drivers of the inflationary situation. In addition, negative aggregate shocks to supply have exacerbated the problem: the disruption of global supply chains; the consequences of the Russian invasion of Ukraine and spillover into areas such as commodities; zero COVID policy in China and European over-dependence on Russian energy.

We are starting to see a reversal in some of the negative supply shocks, while monetary policy continues to tighten. However, there remains risk from a tight labour market, a potential wage-price spiral and a de-anchoring of inflation expectations. When contrasting to the global financial crisis in 2008, that period saw huge monetary stimulus, but little fiscal stimulus; this compares to the additional huge fiscal stimulus we saw during COVID.

Very real risks of stagflation remain

There is much debate about how high rates will go, how quickly inflation will fall and whether a 'soft-landing' can be achieved. Very real risks of stagflation remain given some of the factors already mentioned as well as other issues such as: increased protectionism; aging populations; as well as global climate change and further potential impacts on energy and food prices.

Markets review

Through the first half of 2023 there has been a reasonably strong recovery in equities, although only a very modest gain in bonds after both asset classes had a very poor year in 2022. Global equities*** and global bonds** have risen 11.9% and 2.3% respectively. It should be noted that over the last 18 months, even after the moves, global equities and global bonds remain down 10.5% and 14.8% respectively.

As has already been highlighted. The equities gain, particularly in the US, has also been primarily driven by a handful of names, primarily tech companies. US equity performance outside those tech names has been less impressive. The vast bulk of equity performance came in January (+7.3%) and June (+5.6%). In January there was positive sentiment driven by declining inflation, strong GDP growth data from the US and Europe as well as China's reopening. June saw a rally in response to a pause from the Fed on interest rate rises, resolution of the US debt ceiling and strong economic data. Global bonds also saw their strongest performance during these months. February was a very poor month for bonds (-3.2%) and equities also pulled back (-2.9%). This was linked to heightened concerns over inflation and further expectation of rate hikes from the Fed. March saw the banking crisis and a big fall in rates, causing a rise in bonds and some difficulties for the hedge fund space. A further rate hike in May also put pressure on bonds and contributed to a slight retracement in equities.

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Japanese equities have performed extremely well, while European equities have also outperformed the US. The performance of Chinese equities has been more muted.

During the period government bond yields increased, particularly in the US and the UK.

Currency movements reflected a weakening in the US dollar. In commodities, there were gains in gold, while there were sharp declines across the energy and agricultural commodity complex.

Within credit markets, non-investment grade indices outperformed their investment grade counterparts in the US.

Hedge fund industry performance review

Asset growth

Hedge fund assets – as measured by those funds reporting to Aurum's Hedge fund Data Engine – have grown by $35.3bn since the end of 2022 to stand at $2.9 tn. This was driven by net positive performance (+$79.4bn) and partially offset by net outflows of $44.1bn. Seven of the eight master hedge fund strategies saw net growth in AUM, led by multi-strategy funds, followed by equity L/S. Multi-strategy fund growth was driven primarily by positive performance and modest capital inflows. Equity L/S growth was entirely driven by net positive P&L, partially offset by capital outflows. Arbitrage and credit saw modest growth in assets; this growth in arbitrage was largely driven by modest positive flows and modest positive P&L. Credit growth was driven entirely by P&L and was partially offset by net capital outflows.

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Headline performance

The hedge fund industry was up 3.4% to the end of June and is now back up to its high-water mark after 18 months. The median performing hedge fund sub-strategy, ranking 16th out of the 31 tracked sub-strategies) was up 3.2% (ELS – FEMN), while the median performing hedge fund across the entire universe was up 2.5%[3]. A resurgence in risk assets provided a tailwind to more long biased and/or historically higher beta strategies, such as activist event driven (9.7%), long-biased equity (8.2%), and US equity long/short (8.8%). It should be noted that all of these strongest performing areas were among the worst performing in 2022. For example, US equity l/s was previously down in 2022 10.5%, event – activist was down 9.9%, and long-biased equity was down 18.6%.

> **The best performing strategies of 2022 have underperformed significantly in H1 23 as strategies with higher beta to risk assets have led performance.**

H1 performance was heavily weighted at the start of the year, and at the end of Q2. The industry was up 2.0% in January, heavily assisted by a huge rally in risk assets. There was positive sentiment aided by falling inflationary pressure, strong growth data and China reopening. Only quant strategies were down during the month. June (+1.4%) saw another very strong month for risk assets, only arbitrage funds were down during the month. Industry performance was marginally negative in Feb, Mar and close to flat in May.

March's industry negative performance (-0.33%) was predominantly driven by a tough month for macro strategies (both macro - global macro and quant - macro), quant – CTA, and to a lesser extent credit. This will be covered in more detail below.

Few sub-strategies were positive both in 2022 and in H1 2023, so it is worth highlighting macro – FIRV (up 8.3% in 2022 and up 4.9% for the period), multi-strategy (9.0% and 2.9%)[2], and quant – stat arb (11.8% and 4.9%) as sub-strategies that have been particularly resilient over the last 18 months.

Five-year performance (CAR) for hedge funds now stands at 4.7%, comfortably outperforming bonds (-1.3%) but marginally underperforming global equities (5.6%) from a total return perspective, however outperforming equities from a risk-adjusted perspective (Sharpe of 0.5 vs 0.3).

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3 - See performance dispersion candlestick chart.

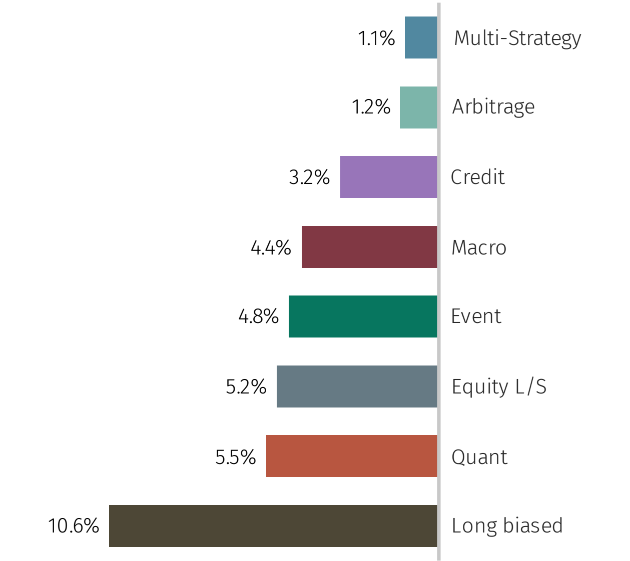
Dispersion

As can be seen in the following chart, dispersion between the top and bottom decile performing hedge funds has fallen dramatically, as has general risk asset volatility. Dispersion now sits at a level much more in line with levels observed pre-COVID.

10th – 90th PERCENTILE 12M ROLLING PERF. SPREAD[2]

Performance spread presented on an equally weighted basis

STANDARD DEVIATION (H1)



Strategy performance

A pattern has emerged in strategy performance, which is more visible at the sub-strategy level. The best performing strategies in 2022 have underperformed to June 2023, and the reverse is true - that the worst performing strategies in 2022 have been the best performers over the period in 2023. Leading the way so far this year is equity L/S, up 6.1%, having finished 2022 down 9.7%. Credit is up 3.9% having lost 3.8% in 2022, long-biased strategies were up 4.0% losing 14.2% last year, and event strategies were up 3.2% having lost 4.7% in 2022. These are all areas that have sub-strategy components with a higher beta to risk assets, particularly sub-strategies such as event – activist (+9.7%), ELS – US (equity long/short in the US) (+8.8%), long-biased equity (+8.2%), and credit – distressed (+4.2%). During the period global equities have rallied significantly (+11.9%), while global bond performance has been more muted (+2.3%). Last year's top performing master strategy, multi-strategy, is up 2.9% slightly underperforming the broader universe, however, over the last five years, it remains comfortably ahead of the other master strategies, with a CAR of 9.2% and a Sharpe of 1.8. Arbitrage is the worst performing master strategy in the period (+0.6%) after having posted a modest return in 2022 (+3.4%). Macro has also struggled driven by poor performance from the global macro and commodity sub-strategies; macro – global and macro – commodities were among the worst of all the sub-strategies, down 2.0% and 0.9% respectively, ranking out of 29th and 28th out of the 31 sub-strategies.

NET RETURN (1 YR)

Net Performance[1]	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	YTD	12M
Equity L/S	2.31%	0.01%	-2.89%	1.43%	2.43%	-0.09%	3.42%	-1.14%	0.47%	0.70%	0.92%	1.65%	6.12%	9.46%
Long biased	4.61%	-2.27%	-6.35%	1.78%	5.78%	-2.27%	4.97%	-3.13%	1.76%	-0.11%	-2.06%	2.74%	4.01%	4.77%
Credit	1.19%	0.52%	-2.08%	0.11%	1.35%	0.39%	2.24%	0.19%	-0.45%	0.66%	0.28%	0.93%	3.89%	5.40%
Event	1.79%	0.26%	-1.89%	1.62%	1.21%	-0.22%	2.51%	-0.17%	-0.24%	0.03%	-0.95%	2.01%	3.19%	6.04%
Multi-Strategy	0.78%	1.42%	0.37%	0.61%	0.13%	1.59%	0.61%	0.70%	-0.04%	0.55%	0.25%	0.79%	2.89%	8.02%
Quant	-1.97%	1.23%	2.02%	-0.22%	-2.91%	0.26%	-1.15%	2.09%	-2.14%	1.04%	0.18%	1.25%	1.21%	-0.48%
Macro	0.30%	1.75%	0.23%	0.77%	0.70%	1.34%	1.70%	-0.16%	-1.97%	0.10%	-0.09%	1.15%	0.69%	5.90%
Arbitrage	-0.89%	1.44%	0.69%	-0.54%	-1.01%	1.00%	0.01%	0.57%	-0.23%	-0.04%	0.51%	-0.24%	0.57%	1.23%
HF Composite*	**1.19%**	**0.44%**	**-1.51%**	**0.79%**	**1.02%**	**0.22%**	**1.98%**	**-0.17%**	**-0.33%**	**0.48%**	**-0.01%**	**1.42%**	**3.39%**	**5.60%**
Bonds**	**1.88%**	**-3.91%**	**-5.00%**	**-0.34%**	**4.73%**	**0.16%**	**3.25%**	**-3.20%**	**3.25%**	**0.68%**	**-1.99%**	**0.44%**	**2.27%**	**-0.57%**
Equities***	**6.89%**	**-3.63%**	**-9.86%**	**5.93%**	**7.48%**	**-3.87%**	**7.26%**	**-2.90%**	**2.11%**	**1.09%**	**-1.46%**	**5.64%**	**11.92%**	**13.74%**

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Performance

Equity long/short

Equity long/short (see full equity long/short analytics pack here) performed well and was the top performing of the master strategies over the period. Perhaps unsurprisingly, given the positive beta bias inherent in the strategy, the majority of the performance came in January and June (up 3.4% and 1.7%), both months where we saw a strong rally in equities (up 7.3% in January and 5.6% in June). The worst performing month occurred in February (down 1.1%), when equity markets were weakest as market volatility became more elevated due to concerns relating to inflation and further interest rate rises. In February, equities and bonds lost 2.9% and 3.2% respectively. Over longer horizons, equity L/S has performed better than the majority of the other master hedge fund strategies over the last five years. Out of the eight core areas, only event and multi-strategy has outperformed, however, the five-year Sharpe ratio (Rfr: 1.88%) is mediocre (0.4).

Strong performance in the equity l/s space has been driven by US and global oriented funds (ELS – US and ELS – global were up 8.8% and 7.9% respectively, ranking second and fourth out of 31 industry hedge fund sub-strategies). European and Asian focused funds and market neutral funds underperformed the rest of the equity l/s space (ELS – EUR was up 5.2%, ELS – APAC was up 1.8%, ELS – FEMN was up 3.2%). Sector specialist funds, which typically have a US bias, also performed well (ELS – sector was up 6.0%, ranking fifth out of 31).

As highlighted at the start of the review, one of the significant drivers of performance (in the US in particular) has been the exceptional performance of a handful of stocks[1], with the so called 'magnificent seven' adding $3.6 trillion in market cap.[2] Outside of this performance has been much more muted, with a number of managers relative success/failure having been a function of their relative exposure to these names. According to Goldman Sachs research, TMT L/S managers posted "the best first six months of the year on our record".

Over the last five years, global equity l/s (ELS – global) funds have been the best performing funds from an absolute return perspective (CAR: 6.2%) and although those funds running at, or close to, market neutral (ELS – FEMN) have run at a higher Sharpe (0.6), the risk-adjusted outperformance is marginal (vs. 0.5 for ELS – global). Sector oriented long/short funds (ELS – sector) have had the lowest five-year returns (CAR: 3.6%), exhibited the highest annualised volatility (12.5%) and the lowest risk adjusted returns (Sharpe: 0.2) of the space.

As can be seen in the alpha/beta decomposition charts, a significant portion of equity l/s returns over time appear to be attributable to beta, with this increasing significantly in recent months. Over the last ten years, the analysis attributes well over 40% of the total returns to beta. Correlations to equities over five years is 0.9.

Equity l/s dispersion between top and bottom decile performers is the second highest among the master strategies, currently sitting at 30.4%, although this figure is still below its ten-year average.

Long biased

The long biased strategy (see full long biased analytics pack here) was up 4.0% over the period, ranking second out of the eight master hedge fund strategy classifications. As one would expect, there has been a high correlation with the broader moves in risk assets, making outsized returns in January, March and June, and losing money in the February and May equity market pull-backs. Headline performance for this strategy would have been stronger but for the underperformance of the large sub-strategy long – diversified growth, which was up just 1.5% over the period. By contrast long – equity (the largest constituent driver of the long biased master strategy) was the third best performing of the 31 hedge fund industry sub-strategies, up 8.2% over the period. It is also worth noting that this figure still significantly lags overall equity market performance over the period (up 11.9%). As highlighted previously in the report, a significant driver of equity returns, particularly in the US, has been in just a very small handful of primarily tech stocks. Outside of these names the market performance is much more muted.

Over the last five years the CAR of the master strategy is 4.1% (ranking sixth out of the eight core strategy areas) and has the second worst five-year Sharpe ratio (0.25). When looking at the sub-strategies over five years, long – equity is the 10th best performing (CAR: 6.1%) across all 31 hedge fund sub-strategies, with long – other ranking 14th, long-commodities 21st and diversified growth 26th.

It is also no surprise that when decomposing returns into simple alpha/beta contribution, this strategy ranks by far the highest for the relative contribution of beta to total returns generated over the last ten years. In fact it appears that alpha for the aggregate group has been negative, when benchmarked to global equities.

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[1] *"The magnificent seven" - Apple, Microsoft, Meta, Google, Amazon, Tesla and Nvidia in particular.*
[2] *Source – Ben Bakkum – JPM: https://www.etfstream.com/articles/nasdaq-100-plans-special-rebalance-to-curb-tech-giant-concentration*

Credit

Credit (see full credit analytics pack here) (up 3.9%) was the third-best performing master strategy for the period. It has been up five out of the six months. Funds operating more in the distressed credit space (credit – distress) slightly outperformed (+4.2%) while credit relative value focused funds (credit – credit) marginally underperformed (+3.8%).

The strongest performance occurred in January, alongside the strong, broad rally in risk assets, when the strategy returned 2.2%, the best monthly figure for the credit strategy since November 2021.

Over the last five years, the credit master strategy has a CAR of 3.3%, ranking last out of the eight core strategy areas. It has also had the worst five year Sharpe ratio (0.2).

Relative to the broader hedge-fund universe, both credit sub-strategies performed better than the median sub-strategy, ranking 12th (credit – distress) and 15th (credit – credit) out of the 31 sub-strategy classifications. Credit sub-strategies were both positive five out of six months, with just a modest down month in March for both, the same month as the banking crisis, which impacted lower-rated credit products and defaulted bonds. Relative value credit books that were more hedged also tended to lag those less tightly hedged.

Over five years, the returns have been more modest from a CAR perspective, with credit – credit at 3.0% and credit – distress at 4.3% and Sharpe ratios of 0.2 and 0.3 respectively, which is below the broader hedge fund industry figures of 4.7% and 0.5.

Alpha/beta attribution of returns suggests that the credit strategy has a persistent positive beta to global equities, unsurprising as typically credit funds exhibit a significant 'long-risk' bias. When looking in more detail at this (figures available in the credit analytics pack), credit – distressed appears to exhibit more alpha over the last ten years relative to credit – credit.

Event

Event (see full event analytics pack here) was up 3.2% for the period (ranked fourth out of the eight master strategies). The performance has been overwhelmingly driven by the 'beta-heavy' event – activist sub-strategy, currently ranked 1st out of the 31 sub-strategies, up 9.7% over the period. All of the positive performance was correlated to the January and June equity rallies, with flat to negative performance in the remaining four months. A number of event-driven managers that incorporate merger arbitrage found it to be quite a challenging period with a number of merger deals suffering setbacks (discussed further below). Some of those deals were widely held and impacted performance across multiple event sub-strategies. Over the last five years, the event space has a CAR of 6.0%, ranking second out of the eight master hedge fund strategies.

Outside of the event – activist, the other sub-strategies underperformed the broader hedge fund universe. From January to June, event – multi is up 2.3%, event – opp is up just 0.3% and event – M&A is down 0.6%. As highlighted above, there were a number of large widely held merger deals that ran into difficulties, which hurt several funds, not just in M&A, but across the broader space. May was a particularly difficult month, with the FTC suing to block the Horizon Therapeutics/Amgen deal, leading to some more widespread de-risking. During the same month, the deal between First Horizon and TD Bank was mutually terminated.

Over the longer term, event - activist is the highest performing of the industry sub-strategies, with a CAR of 10.1%, albeit with a high volatility (15.4%) over the last five years. On a risk-adjusted basis, with a Sharpe of 0.6, it lags well behind other sub-strategies such as multi-strategy, fixed income relative value, statistical arbitrage, opportunistic arbitrage and event – multi-strategy funds, all industry sub-strategies that have delivered a Sharpe over 1.0 in the last five years. Event – multi has also outperformed the broader hedge fund universe from an absolute return perspective over that period. Event M&A has returned a CAR of 4.5% at a Sharpe of 0.5, while event – opp is at 3.3% but with a Sharpe of just 0.2.

Headline alpha/beta attribution indicates that the strategy has generated a reasonable proportion of its returns from alpha over the last ten years, with a meaningful pickup in beta attribution this year. When one looks through at the underlying sub-strategies (see full event analytics pack here) it is interesting to note that all of the sub-strategies attribute a meaningful proportion of the returns generated to alpha. Event – M&A attributes the smallest proportion of returns to beta, with the vast majority of returns attributable to the risk-free rate and alpha, which is in line with what one would expect from the strategy. Event – multi, the sub-strategy with the highest risk-adjusted returns over five years among the event group, attributes the majority of returns to alpha and has the lowest 'beta contribution'. The event – activist strategy also exhibits a significant positive alpha component, but one should take note of the correlation to risk assets and beta that historically appears to be implicit in the strategy. Overall performance has been correlated highly with broader market moves and the statistics show a relatively high 'beta' attribution to overall P&L over the last ten years. As we saw in 2022, event – activist was one of the poorest performing industry sub-strategies during the sell-off, this was also a similar story in 2020 during the COVID crisis.

Multi-strategy

Multi-strategy (see full multi-strategy analytics pack here) funds slightly underperformed relative to the rest of the hedge fund space, returning 2.9% versus the broader industry figure of 3.4%, ranking fifth out of the eight master strategies. However, once again the strategy has been reasonably consistent, delivering positive returns five out of the six months, with just one marginally down month in March, a period that was especially challenging due to the issues for regional US banks and for those hedge funds with macro exposure. Overall, it has been more challenging for multi-strategy firms that have a more relative-value approach. A lack of breadth in US equity markets has made equity l/s more challenging, although most platforms with significant equity long/short businesses have been able to generate positive performance this year. As highlighted above, macro has been a challenging space and some large multi-strategy funds with a larger allocation to macro did not escape difficulties in June, with losses arising through systematic futures exposure and/or discretionary desks. Some of the biggest opportunities, as highlighted above, have been in more 'risk-on' oriented trades as well as capturing the moves in a small sub-set of equity names. Some of the relative out/underperformance was certainly impacted to the extent that some of these multi-strategy managers held exposure to those names and in what concentration. Most funds in the space tend to be massively diversified by nature, so overall, the impact relative to more concentrated strategies such as ELS – US, event – activist, ELS – sector, etc. was smaller in aggregate.

Over a longer time frame, multi-strategy funds remain the highest performing hedge fund strategy, ranking first out of the eight master hedge fund strategies over three, five and ten year horizons. Over the five years, multi-strategy funds have a CAR of 9.2% and a Sharpe of 1.8. It should be noted however, that multi-strategy space is dominated by a small handful of very large firms and that median performance is significantly lower than both the mean and asset weighted performance. A number of these large firms are also either hard-closed, or have made moves to significantly worsen their liquidity terms, making access more difficult.

The multi-strategy hedge funds a have performed relatively well versus the various underlying hedge fund industry sub-strategies over the longer term. While over the period multi-strategy ranks 18th out of 31, over five years it ranks 2nd, only behind Event – Activist, which as stated above, has typically delivered its returns at a much higher volatility and much higher beta. Multi-strategy funds on the other hand have delivered the highest Sharpe over the last five years (1.8) and when viewing alpha/beta attribution over ten years, one can see it is the master strategy that has historically delivered by far the largest portion of its returns attributable to alpha.

Quant

Quant strategies (see full quant analytics pack here) were up 1.2% over the period, ranking sixth out of the eight master fund strategies. Interestingly, quant was the only hedge fund master strategy to experience negative performance in the January rally (-1.2%), while on the flip side it gained 2.1% in February. A significant driver of this figure was the sub-strategy quant – macro, which itself was heavily driven by some extremely large fund constituents that were positioned short equities. Quant also struggled in March in the wake of the US banking crisis and record move in rates, which particularly impacted quant – macro and quant – CTA sub-strategies. The strategy was up during the other months of the period under review. Over the last five years quant has a CAR of 3.4% ranking seventh out of the eight master strategy classification with a Sharpe of just 0.3, ranking sixth. Over the last five years, quant ranks seventh out of the eight master sub-strategies. As explained further below, only the statistical arbitrage sub-strategy has performed relatively well, with three of the remaining four sub-strategies among the poorest performing of all hedge fund industry sub-strategies of the last five years.

As is often the case, the headline performance figure for the strategy can hide much of the underlying story. Two of the four quant sub-strategies (quant – macro and quant – CTA) have significantly underperformed the broader hedge-fund universe, returning -0.1% and -0.7%, respectively, while quant – RP (6.0%) and quant – statistical arbitrage (4.9%) produced relatively strong returns over the period. As highlighted above, the key month for macro and CTA performance occurred during the March crisis, impacted more specifically by huge moves in rates in the US and Japan in particular.

As alluded to above, over the last five years, quant – stat arb is the best performing of the quant sub-strategies (CAR: 8.0%) ranking fourth out of the 31 industry sub-strategies, followed by quant – CTA (5.7%) ranking 12th, quant macro (2.1%) ranking 27th, quant – RP (1.4%) ranking 28th, and finally quant – EMN (0.9%) ranking 30th. Quant – stat arb exhibits the third highest 5-year Sharpe (1.6) after multi-strategy and macro – FIRV funds. The longer-term Sharpe ratios for the other sub-strategies were much lower: quant – CTA (0.5), quant – macro (0.1), quant – risk premia (0.0), quant – EMN (-0.1).

When looking at alpha/beta contribution relative to global equities, over the last ten years, quant has delivered the highest relative alpha attribution to strategy returns outside of the multi-strategy funds and – importantly – the lowest beta attribution. When looking at the underlying sub-strategies (see quant analytics pack), the data is consistent with this. Quant – stat arb, has delivered consistent alpha, with virtually no observable attribution from beta to long-term returns. Quant – risk premia has performed poorly, but interestingly the composition shows that the vast majority of any return is composed of the risk-free rate, very high beta and a large negative 'alpha'. Quant – EMN displays some similarities to quant – stat arb, but of course the overall performance has been significantly worse, with a huge amount of negative alpha attribution through the end of 2019 through COVID in particular. That being said, as one would expect, the strategy exhibits little beta attribution. The decomposition of quant – CTAs indicates a negative contribution from beta to overall P&L, moderate alpha and a relatively high contribution from the risk-free rate. Quant – macro shows a similar story, but with a slight positive contribution attributed to beta and lower overall performance.

Macro

Macro strategies (see full macro analytics pack here) were up 0.7% for the period, ranking seventh out of the eight master fund strategy classifications. The primary driver of poor performance has come from the macro – global (-2.0%) and macro – commodities (-0.9%) sub-strategies (ranking 29th and 28th out of all 31 hedge fund industry sub-strategies). As covered at the start of the report, macro managers were wrong-footed by the Q1 banking crisis that saw the collapse of several US regional banks and Credit Suisse. Prior to this point, many funds had been positioned for higher interest rates in the US. The short fixed income trade had been a significant driver of returns in 2022 as inflation hit multi-decade highs and central banks engaged in the most aggressive monetary policy tightening seen in a generation. Data releases in February and Fed Chair Jerome Powell's congressional testimony suggested further tightening and increased macro conviction in their trade. Unfortunately, as the banking crisis unfolded, it led to some of the biggest volatility ever seen in a number of trades related to this thematic view (see "US 2Y Treasury daily change (BPS)" chart on page 2). Offsetting the poor performance was the relatively strong (versus the rest of the hedge fund industry) performance from macro – FIRV (up 4.9% and ranking ninth out

*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.
** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.
Source: Aurum Hedge Fund Data Engine.

of 31 industry sub-strategies) and macro – EM (up 4.0%, ranking 13th), benefitting from the more generally buoyant market for risk assets and higher rate volatility.

Over the last five years, macro ranks fifth out of the eight master strategy classifications, with a CAR of 4.3%, although has a Sharpe ratio in line with the broader industry (0.5). As highlighted at the start of the report, macro – global was one of the strategies that fell into the category of having been one of the stronger performers through the volatility of 2022 but gave back P&L across H1 2023. Over five years, macro – commods (CAR: 6.7%) and macro – FIRV (6.5%) were among the strongest hedge fund industry sub-strategies ranking fifth and sixth respectively out of 31. Macro – EM is one of the weakest (1.3%) ranking 29th. Macro – FIRV has also delivered the second highest Sharpe ratio (1.6) after multi-strategy.

When looking at contribution of returns over the last ten years from an alpha/beta perspective relative to global equities, the strategy has shown a relatively high contribution attributable to the risk-free rate, with marginally higher contribution coming from alpha relative to beta. When looking at the underlying sub-strategies (see full macro strategy analytics pack here) it is unsurprising that macro – EM appears to have the highest observable beta, but has exhibited negative alpha. Macro – global has performed reasonably well, with modest positive returns attributable to beta, with the rest approximately equally split between risk-free and alpha. Macro – FIRV exhibits a very consistent positive alpha, very low beta and some contribution attributed to the prevailing level of risk-free rates. Figures were unsurprising given the specific relative value asset class focus of such funds versus the benchmark of global equities (used as a proxy for global risk-assets).

Arbitrage

Arbitrage strategies (see full arbitrage strategies analytics pack here) were up 0.6% over the period, ranking last out of the eight master fund strategies. The strategy was flat to marginally positive in three out of six months. There was little volatility, with the largest up month occurring in February (up 0.6%) and the largest down month occurring in June (down 0.2%). Under the surface however, there was a wider story among the sub-strategies, discussed further below; convertible arbitrage (arb – CB) was up 4.8% ranking tenth out of the 31 hedge fund universe sub-strategies with above average performance (relative to the broader HF industry) also coming from arb – opp (4.0%) ranking 14th. However, arb – vol returned just 0.4% and tail hedging strategies (arb – tail) was the worst performing across all 31 sub-strategies (-8.0%). In the context of rallying global risk assets, falling realised and implied volatility and narrow equity markets, these figures were understandable.

Over the last five years, arbitrage is ranked fourth out of the eight master strategy classifications, returning a CAR of 4.5%, but has the second highest Sharpe ratio (0.9). From a sub-strategy perspective arb – opp (arbitrage focused hedge funds with an opportunistic approach), has performed relatively well with a CAR of 8.9%, ranking third with a Sharpe of 1.0, arb – CB ranking seventh (6.4%) with a Sharpe of 0.9. Arb – vol, ranks 25th out of the 31 sub-strategies with a CAR of 3.0%, while arb – tail has delivered a CAR of -1.2% over the time period and ranks last out of the 31 sub-strategies. The arb- tail sub-strategy was able to deliver positive returns in the tough years of 2020 and 2021, indicating that it was broadly doing what it was supposed to do. When one reviews the alpha/beta attribution analysis over ten years, the arbitrage strategy stands out relative to the other hedge fund master strategies, showing a high proportion of its returns derived from alpha (albeit that these returns have only really occurred in the last four years) as well as a negative attribution from beta. The significant driver of this being the tail protection and long-volatility characteristics of a significant proportion of the underlying contributors. When looking at the sub-strategies (see arbitrage analytics pack) the arb – opp attributes the largest proportion of returns generated to alpha, but still has a portion attributable to beta. Arb – CB has achieved proportionally less alpha and a bit more beta. Volatility arbitrage, has produced modest returns, but these returns have exhibited a positive attribution from a mix of alpha and risk-free, with a slightly negative contribution from beta. Tail-protection is more extreme, exhibiting a significant negative beta to risk assets, which has been the main driver of the overall losses along with some negative alpha.

NET RETURN (1 YR) - SUB-STRATEGY

Net Performance[1]	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	YTD	12M
Event - Activist	7.19%	-1.64%	-5.79%	6.88%	4.85%	-2.44%	6.36%	-0.23%	-0.13%	-0.07%	-1.49%	5.15%	9.71%	19.13%
ELS - US	3.78%	-0.77%	-4.27%	3.01%	2.60%	-0.74%	3.62%	-0.12%	0.64%	0.55%	1.29%	2.58%	8.82%	12.54%
Long - Equity	4.93%	-1.60%	-7.41%	2.32%	7.08%	-2.63%	6.70%	-3.22%	1.49%	0.03%	-1.36%	4.59%	8.16%	10.31%
ELS - Global	3.05%	-0.69%	-2.93%	2.28%	2.62%	-0.05%	3.20%	-0.72%	1.44%	1.05%	0.67%	2.02%	7.86%	12.39%
ELS - Sector	3.30%	0.67%	-3.54%	1.83%	1.90%	-0.55%	3.84%	-1.98%	-0.30%	1.10%	2.00%	1.27%	5.98%	9.71%
Quant - RP	2.42%	-2.14%	-3.31%	3.83%	1.00%	-1.84%	2.41%	-0.21%	0.65%	0.83%	-0.73%	2.95%	5.98%	5.72%
ELS - EUR	1.67%	-0.18%	-0.65%	1.35%	0.98%	-0.09%	1.81%	0.15%	0.36%	0.97%	0.78%	1.05%	5.23%	8.48%
Quant - Stat Arb	1.20%	1.26%	0.64%	-0.28%	0.31%	0.94%	-0.63%	2.73%	0.34%	0.15%	0.20%	2.10%	4.94%	9.27%
Macro - FIRV	1.24%	1.05%	-0.79%	1.45%	1.72%	1.28%	1.70%	0.75%	0.17%	0.61%	0.41%	1.13%	4.85%	11.21%
Arb - CB	0.72%	1.61%	-2.43%	-0.13%	1.07%	1.27%	2.74%	0.09%	0.07%	0.33%	0.61%	0.90%	4.81%	6.99%
Long - Other	5.14%	-0.87%	-4.99%	0.30%	4.45%	-0.98%	4.43%	-1.86%	0.80%	0.31%	-0.91%	2.05%	4.77%	7.62%
Credit - Distress	0.55%	1.32%	-1.89%	0.21%	0.72%	0.18%	2.41%	0.52%	-0.80%	0.47%	0.33%	1.23%	4.20%	5.31%
Macro - EM	0.12%	0.81%	-3.01%	0.09%	3.38%	1.38%	3.53%	-1.58%	-0.97%	-0.13%	-0.08%	3.32%	4.03%	6.83%
Arb - Opp	-0.19%	2.20%	-0.15%	0.18%	-0.52%	1.16%	1.82%	0.62%	-0.37%	0.41%	0.79%	0.63%	3.95%	6.73%
Credit - Credit	1.35%	0.32%	-2.12%	0.08%	1.52%	0.44%	2.19%	0.11%	-0.37%	0.71%	0.27%	0.83%	3.78%	5.40%
ELS - FEMN	0.68%	0.13%	-0.87%	1.06%	0.15%	1.77%	0.91%	-0.25%	1.06%	0.79%	-0.55%	1.23%	3.23%	6.27%
ELS - Other	-0.12%	0.44%	-3.55%	0.45%	5.33%	-0.40%	3.55%	-1.44%	-0.68%	0.80%	-1.50%	2.53%	3.20%	5.23%
Multi-strategy	0.78%	1.42%	0.37%	0.61%	0.13%	1.59%	0.61%	0.70%	-0.04%	0.55%	0.25%	0.79%	2.89%	8.02%
Event - Multi	-0.25%	0.96%	0.03%	-0.43%	0.02%	0.69%	1.13%	-0.06%	0.27%	0.11%	-0.22%	1.07%	2.32%	3.37%
ELS - APAC	-2.05%	1.06%	-2.05%	-3.45%	5.26%	1.50%	5.14%	-3.05%	0.74%	-1.36%	-0.85%	1.35%	1.78%	1.80%
Long - Div Growth	4.42%	-3.20%	-5.38%	1.27%	4.97%	-2.02%	3.89%	-3.03%	2.23%	-0.21%	-2.52%	1.28%	1.47%	1.09%
Quant - EMN	-1.74%	-3.03%	-1.15%	3.73%	2.79%	1.96%	-0.57%	0.91%	1.86%	-0.26%	-1.40%	0.48%	0.99%	3.41%
Arb - Vol	-0.50%	0.33%	0.30%	0.33%	-0.56%	0.67%	-0.42%	0.41%	0.45%	-0.22%	0.63%	-0.41%	0.44%	1.00%
Event - Opp	1.10%	0.33%	-2.67%	1.05%	0.94%	-0.20%	2.37%	-0.39%	-1.37%	-0.14%	-1.29%	1.14%	0.28%	0.77%
Quant - Macro	-4.06%	3.02%	3.98%	-4.09%	-6.82%	0.00%	-3.76%	4.17%	-1.89%	1.43%	-0.38%	0.54%	-0.07%	-8.23%
Event - M&A	1.73%	0.98%	-0.30%	1.71%	-0.46%	0.69%	0.25%	0.04%	-0.01%	0.32%	-2.46%	1.34%	-0.55%	3.83%
Quant - CTA	-2.82%	2.67%	3.79%	0.32%	-4.62%	-0.06%	-0.59%	1.34%	-6.17%	1.84%	1.68%	1.43%	-0.70%	-1.67%
Macro - Commods	0.68%	-0.65%	-2.17%	1.59%	0.06%	1.43%	1.90%	-1.93%	0.57%	0.37%	-0.89%	-0.83%	-0.86%	0.03%
Macro - Global	-0.08%	2.69%	2.04%	0.60%	-0.44%	1.33%	1.08%	0.11%	-3.48%	-0.08%	-0.22%	0.68%	-1.95%	4.21%
Long - Commods	3.30%	0.41%	-7.01%	2.52%	2.12%	-2.14%	0.12%	-4.27%	-0.30%	-0.59%	-4.87%	3.18%	-6.76%	-7.87%
Arb - Tail	-4.41%	2.34%	6.29%	-3.83%	-5.08%	1.15%	-4.85%	1.40%	-1.64%	-0.78%	-0.25%	-2.09%	-8.03%	-11.71%
HF Composite*	**1.19%**	**0.44%**	**-1.51%**	**0.79%**	**1.02%**	**0.22%**	**1.98%**	**-0.17%**	**-0.33%**	**0.48%**	**-0.01%**	**1.42%**	**3.39%**	**5.60%**
Bonds**	**1.88%**	**-3.91%**	**-5.00%**	**-0.34%**	**4.73%**	**0.16%**	**3.25%**	**-3.20%**	**3.25%**	**0.68%**	**-1.99%**	**0.44%**	**2.27%**	**-0.57%**
Equities***	**6.89%**	**-3.63%**	**-9.86%**	**5.93%**	**7.48%**	**-3.87%**	**7.26%**	**-2.90%**	**2.11%**	**1.09%**	**-1.46%**	**5.64%**	**11.92%**	**13.74%**

*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.
** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.
1 = Returns net of all fees and expenses. Source: Aurum Hedge Fund Data Engine.

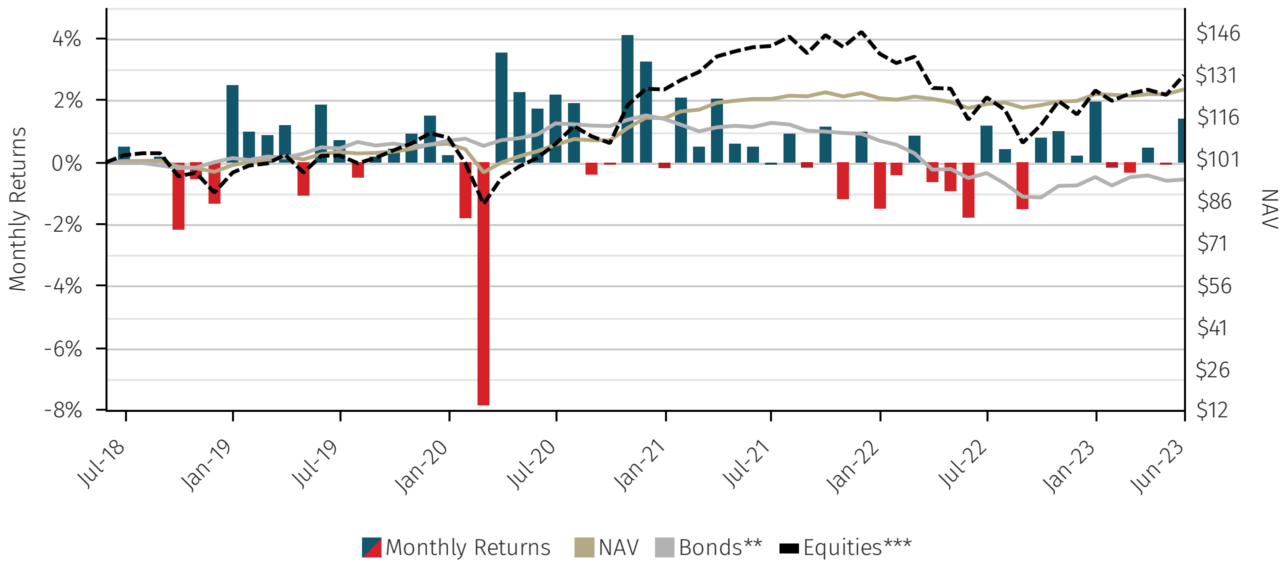
NET RETURN (5 YR) PERIOD TO JUNE 2023 - SUB-STRATEGY

Performance	2023	2022	2021	2020	2019	5Yr CAR	5Yr Vol	5Yr Sharpe
Event - Activist	9.71%	-9.85%	19.14%	22.94%	23.61%	10.08%	15.36%	0.58
Multi-strategy	2.89%	8.97%	11.66%	15.08%	9.70%	9.23%	3.93%	1.80
Arb - Opp	3.95%	2.91%	10.51%	19.18%	7.08%	8.88%	6.86%	1.01
Quant - Stat Arb	4.94%	11.77%	9.61%	10.12%	3.61%	8.01%	3.66%	1.62
Macro - Commods	-0.86%	11.30%	16.39%	9.31%	5.16%	6.67%	7.18%	0.68
Macro - FIRV	4.85%	8.34%	1.37%	8.95%	8.64%	6.45%	2.71%	1.64
Arb - CB	4.81%	-4.62%	7.41%	16.99%	8.76%	6.41%	5.16%	0.87
ELS - Global	7.86%	-9.52%	8.69%	16.53%	16.50%	6.16%	9.52%	0.48
Event - Multi	2.32%	0.96%	10.44%	9.34%	9.04%	6.14%	3.90%	1.07
Long - Equity	8.16%	-18.61%	9.86%	21.65%	23.72%	6.13%	15.37%	0.34
ELS - US	8.82%	-10.52%	7.61%	15.72%	17.60%	5.98%	10.55%	0.43
Quant - CTA	-0.70%	15.05%	8.25%	0.71%	8.61%	5.70%	8.03%	0.50
ELS - Other	3.20%	-2.00%	4.72%	12.15%	16.02%	5.14%	10.31%	0.36
Long - Other	4.77%	-8.07%	12.04%	8.11%	11.20%	4.79%	9.09%	0.36
ELS - FEMN	3.23%	1.25%	4.81%	7.23%	11.80%	4.74%	5.22%	0.56
Macro - Global	-1.95%	11.04%	-1.54%	9.50%	8.85%	4.67%	4.63%	0.61
Event - M&A	-0.55%	1.84%	6.44%	7.12%	5.85%	4.51%	5.77%	0.47
Credit - Distress	4.20%	-2.93%	15.18%	4.93%	4.19%	4.28%	8.11%	0.33
ELS - EUR	5.23%	-3.99%	8.39%	9.27%	9.10%	4.15%	5.53%	0.43
ELS - APAC	1.78%	-8.57%	3.22%	23.86%	9.16%	4.04%	7.90%	0.31
Long - Commods	-6.76%	15.10%	25.10%	-4.26%	7.04%	3.60%	15.29%	0.19
ELS - Sector	5.98%	-14.73%	-0.56%	27.08%	17.04%	3.56%	12.52%	0.19
Event - Opp	0.28%	-11.25%	9.72%	13.78%	12.03%	3.27%	8.29%	0.21
Credit - Credit	3.78%	-3.99%	6.62%	2.66%	6.71%	3.02%	6.75%	0.20
Arb - Vol	0.44%	6.09%	0.95%	1.84%	3.78%	3.02%	3.07%	0.38
Long - Div Growth	1.47%	-12.79%	9.45%	6.64%	12.81%	2.18%	8.87%	0.08
Quant - Macro	-0.07%	6.62%	4.45%	-4.25%	0.36%	2.13%	8.35%	0.07
Quant - RP	5.98%	-4.41%	13.57%	-7.29%	4.30%	1.35%	6.72%	-0.04
Macro - EM	4.03%	-8.49%	-1.24%	6.31%	7.02%	1.32%	9.36%	-0.01
Quant - EMN	0.99%	5.18%	12.60%	-17.28%	4.21%	0.94%	7.84%	-0.08
Arb - Tail	-8.03%	8.34%	-7.80%	14.37%	-12.21%	-1.18%	12.83%	-0.18
HF Composite*	**3.39%**	**-2.25%**	**7.57%**	**8.97%**	**10.06%**	**4.74%**	**5.91%**	**0.50**
Bonds**	**2.27%**	**-16.69%**	**-5.59%**	**9.84%**	**6.19%**	**-1.25%**	**6.89%**	**-0.42**
Equities***	**11.92%**	**-20.04%**	**16.02%**	**14.34%**	**23.65%**	**5.56%**	**18.20%**	**0.29**

AURUM

**HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.*
*** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.*
Risk Free Rate = period average of 3-month LIBOR-SOFR Risk Free Rate 4.55%. Source: Aurum Hedge Fund Data Engine.

NET MONTHLY RETURN (5 YR) - HEDGE FUND COMPOSITE*



NET RETURN (5 YR) PERIOD TO JUNE 2023

Performance	2023	2022	2021	2020	2019	5Yr CAR	5Yr Vol	5Yr Sharpe
Multi-Strategy	2.89%	8.97%	11.66%	15.08%	9.70%	9.23%	3.93%	1.80
Event	3.19%	-4.67%	11.72%	12.67%	12.17%	5.97%	7.05%	0.60
Equity L/S	6.12%	-9.70%	4.86%	18.24%	14.75%	4.78%	8.96%	0.36
Arbitrage	0.57%	3.36%	3.84%	11.58%	2.00%	4.54%	2.93%	0.90
Macro	0.69%	6.26%	-0.17%	8.26%	8.12%	4.33%	4.80%	0.52
Long biased	4.01%	-14.15%	10.37%	12.93%	17.20%	4.13%	11.45%	0.25
Quant	1.21%	8.57%	8.54%	-4.94%	4.19%	3.40%	5.30%	0.31
Credit	3.89%	-3.78%	8.47%	3.14%	6.09%	3.26%	6.98%	0.23
HF Composite*	**3.39%**	**-2.25%**	**7.57%**	**8.97%**	**10.06%**	**4.74%**	**5.91%**	**0.50**
Bonds**	**2.27%**	**-16.69%**	**-5.59%**	**9.84%**	**6.19%**	**-1.25%**	**6.89%**	**-0.42**
Equities***	**11.92%**	**-20.04%**	**16.02%**	**14.34%**	**23.65%**	**5.56%**	**18.20%**	**0.29**

HIERARCHICAL ANNUALISED NET RETURN TO JUNE 2023

1 YEAR	3 YEAR	5 YEAR	10 YEAR
Equity L/S 9.5%	Multi-Strategy 11.4%	Multi-Strategy 9.2%	Multi-Strategy 7.9%
Multi-Strategy 8.0%	Event 8.0%	Event 6.0%	Event 5.4%
Event 6.0%	Quant 7.0%	Equity L/S 4.8%	Equity L/S 5.3%
Macro 5.9%	HF Composite* 6.6%	HF Composite* 4.7%	HF Composite* 4.6%
HF Composite* 5.6%	Credit 5.7%	Arbitrage 4.5%	Long biased 4.5%
Credit 5.4%	Equity L/S 5.6%	Macro 4.3%	Credit 3.9%
Long biased 4.8%	Arbitrage 5.3%	Long biased 4.1%	Quant 3.6%
Arbitrage 1.2%	Long biased 5.2%	Quant 3.4%	Macro 3.1%
Quant -0.5%	Macro 5.0%	Credit 3.3%	Arbitrage 2.3%

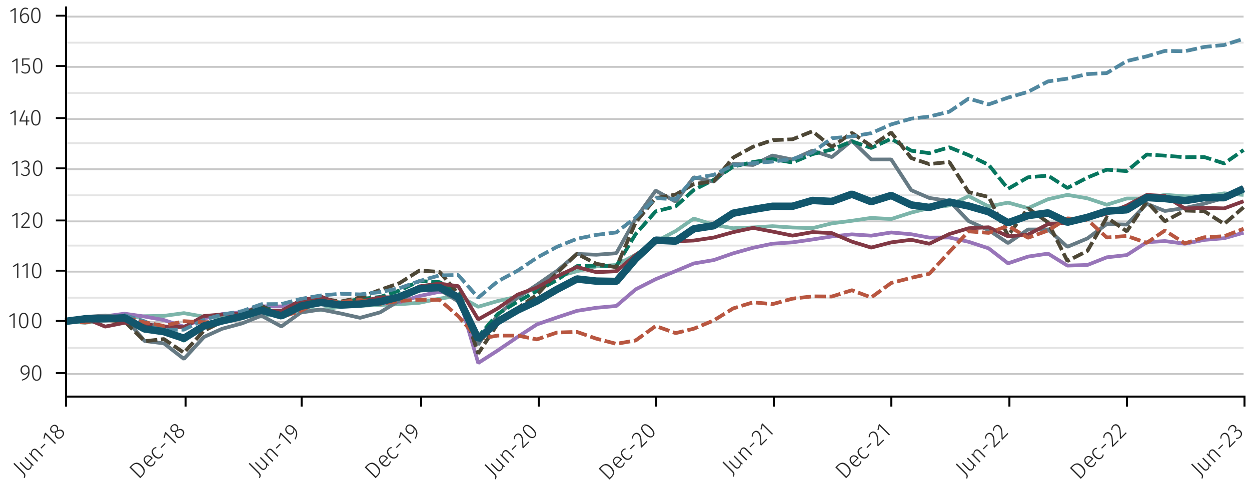
**HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.*
*** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.*
Risk Free Rate = period average of 3-month LIBOR-SOFR Risk Free Rate 4.55%. Source: Aurum Hedge Fund Data Engine.

HIERARCHICAL ANNUALISED NET RETURN TO JUNE 2023 - SUB-STRATEGY

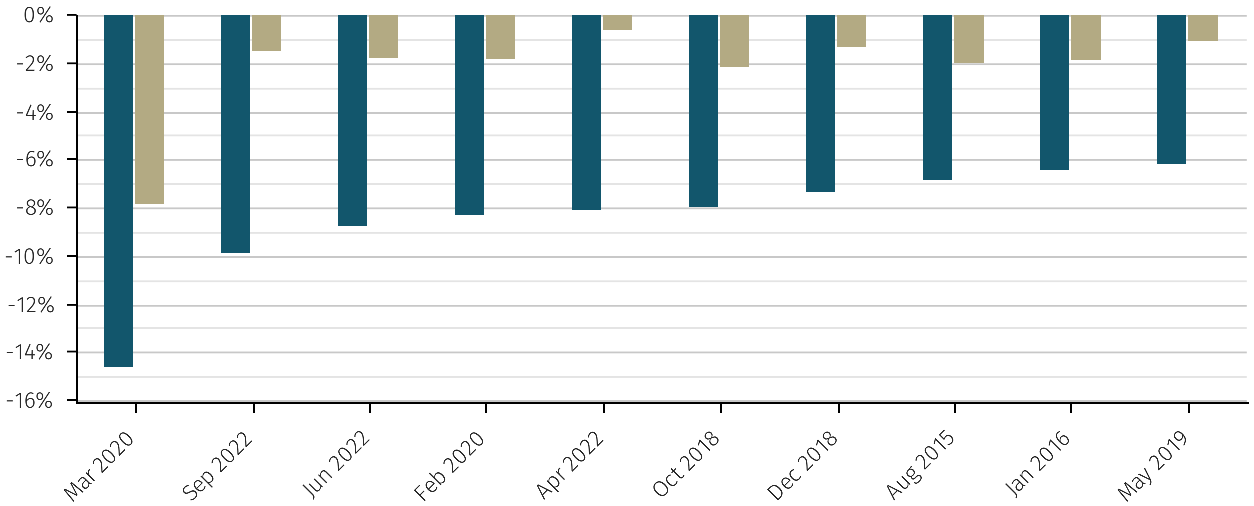
1 YEAR	3 YEAR	5 YEAR	10 YEAR
Event - Activist 19.1%	Long - Commods 17.2%	Event - Activist 10.1%	Event - Activist 9.1%
ELS - US 12.5%	Event - Activist 14.0%	Multi-strategy 9.2%	Multi-strategy 7.9%
ELS - Global 12.4%	Arb - Opp 11.9%	Arb - Opp 8.9%	Quant - Stat Arb 7.8%
Macro - FIRV 11.2%	Macro - Commods 11.7%	Quant - Stat Arb 8.0%	Long - Equity 7.1%
Long - Equity 10.3%	Multi-strategy 11.4%	Macro - Commods 6.7%	ELS - Global 6.6%
ELS - Sector 9.7%	Quant - Stat Arb 10.7%	Macro - FIRV 6.4%	Arb - Opp 5.9%
Quant - Stat Arb 9.3%	Credit - Distress 9.3%	Arb - CB 6.4%	ELS - US 5.7%
ELS - EUR 8.5%	Quant - CTA 9.2%	ELS - Global 6.2%	ELS - APAC 5.7%
Multi-strategy 8.0%	ELS - Global 7.8%	Event - Multi 6.1%	ELS - FEMN 5.6%
Long - Other 7.6%	ELS - Other 7.5%	Long - Equity 6.1%	Event - Multi 5.2%
Arb - CB 7.0%	Event - Multi 7.5%	ELS - US 6.0%	Macro - FIRV 5.1%
Macro - EM 6.8%	ELS - US 7.2%	Quant - CTA 5.7%	Credit - Distress 4.7%
Arb - Opp 6.7%	Long - Equity 6.9%	ELS - Other 5.1%	HF Composite* 4.6%
ELS - FEMN 6.3%	Arb - CB 6.9%	Long - Other 4.8%	ELS - EUR 4.5%
Quant - RP 5.7%	Long - Other 6.9%	ELS - FEMN 4.7%	ELS - Other 4.5%
HF Composite* 5.6%	HF Composite* 6.6%	HF Composite* 4.7%	ELS - Sector 4.4%
Credit - Credit 5.4%	Quant - RP 6.5%	Macro - Global 4.7%	Arb - CB 4.3%
Credit - Distress 5.3%	ELS - FEMN 6.3%	Event - M&A 4.5%	Quant - EMN 4.2%
ELS - Other 5.2%	Macro - FIRV 6.3%	Credit - Distress 4.3%	Long - Other 4.2%
Macro - Global 4.2%	Event - M&A 6.2%	ELS - EUR 4.1%	Quant - CTA 4.0%
Event - M&A 3.8%	ELS - EUR 6.0%	ELS - APAC 4.0%	Event - M&A 3.8%
Quant - EMN 3.4%	Macro - Global 5.4%	Long - Commods 3.6%	Event - Opp 3.8%
Event - Multi 3.4%	Quant - Macro 5.1%	ELS - Sector 3.6%	Credit - Credit 3.6%
ELS - APAC 1.8%	Credit - Credit 4.7%	Event - Opp 3.3%	Long - Div Growth 3.1%
Long - Div Growth 1.1%	Event - Opp 4.6%	Credit - Credit 3.0%	Macro - Global 3.0%
Arb - Vol 1.0%	Quant - EMN 4.0%	Arb - Vol 3.0%	Macro - Commods 2.8%
Event - Opp 0.8%	ELS - APAC 3.9%	Long - Div Growth 2.2%	Macro - EM 2.4%
Macro - Commods 0.0%	Arb - Vol 3.8%	Quant - Macro 2.1%	Quant - Macro 2.4%
Quant - CTA -1.7%	ELS - Sector 3.2%	Quant - RP 1.3%	Quant - RP 2.4%
Long - Commods -7.9%	Long - Div Growth 2.4%	Macro - EM 1.3%	Arb - Vol 2.3%
Quant - Macro -8.2%	Macro - EM 1.4%	Quant - EMN 0.9%	Long - Commods -0.9%
Arb - Tail -11.7%	Arb - Tail -4.4%	Arb - Tail -1.2%	Arb - Tail -4.8%

*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index..
Source: Aurum Hedge Fund Data Engine.

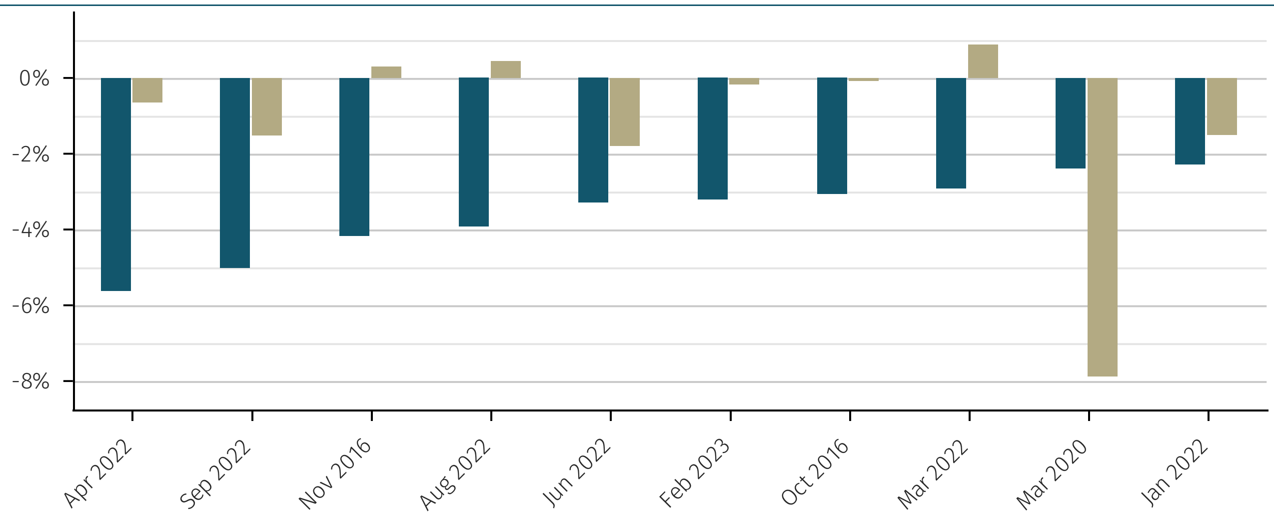
CUMULATIVE RETURN (5 YR) PERIOD TO JUNE 2023



PERFORMANCE DURING WORST 10 MONTHS FOR EQUITIES*** (10 YR) PERIOD TO JUNE 2023 – HF COMPOSITE



PERFORMANCE DURING WORST 10 MONTHS FOR BONDS** (10 YR) PERIOD TO JUNE 2023 – HF COMPOSITE



AURUM

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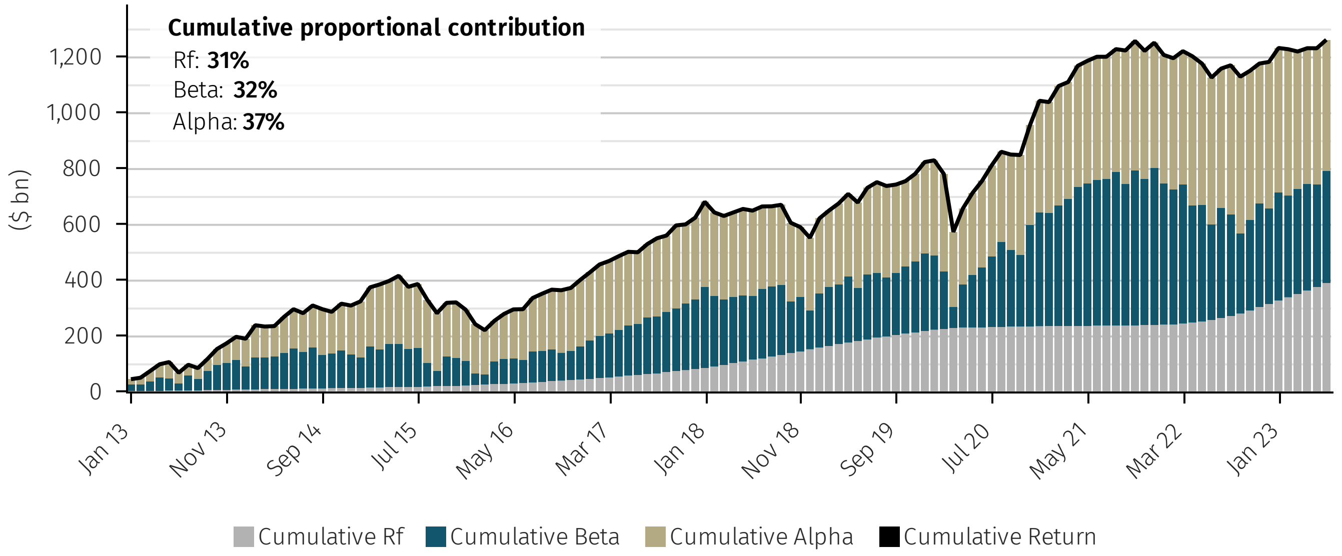
Source: Aurum Hedge Fund Data Engine.

DECOMPOSING DOLLAR PERFORMANCE INTO ALPHA, BETA AND RISK FREE (RF) COMPONENTS

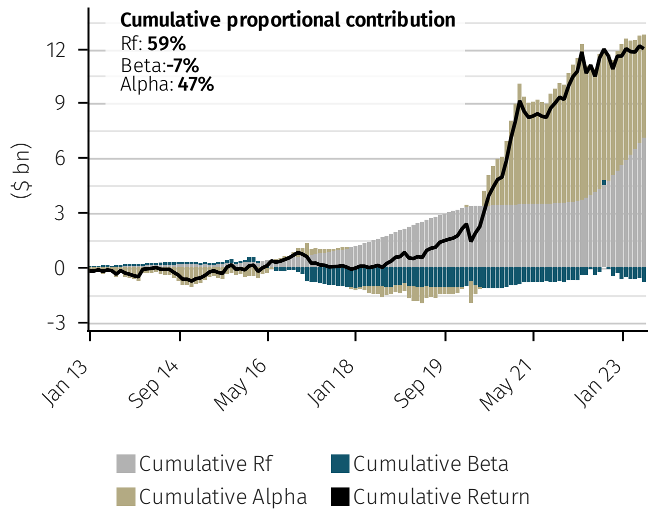
HF Composite



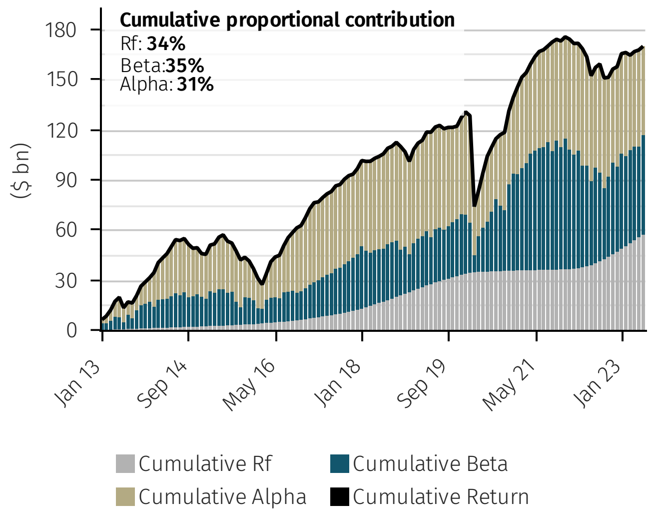
*These charts decompose the Hedge Fund Composite dollar returns into Beta, Alpha and Risk free ("Rf") components, as follows: Alpha = Actual return – Rf – Beta * (Market return – Rf).*

Where Rf is the Risk-free rate as defined by a rolling 3-month LIBOR-SOFR, where market return is that of S&P Global BMI ('the market index') and where Beta has been calculated with respect to each underlying fund observed on a 60m rolling basis to the market index. The monthly Alpha, Beta and Rf components are then applied to each underlying fund's dollar performance for a particular month, and then at a master strategy or industry level the individual fund dollar contributions are aggregated.

Arbitrage

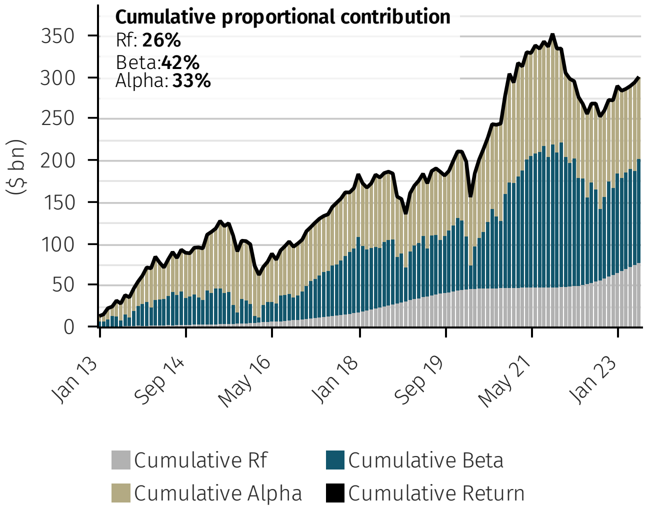


Credit

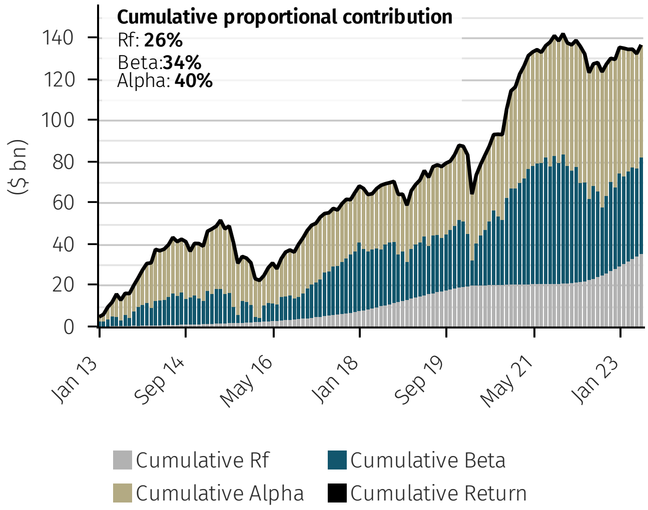


Risk Free Rate = period average of 3-month LIBOR-SOFR Risk Free Rate 4.55%. Source: Bloomberg.
**HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.*
Source: Aurum Hedge Fund Data Engine.

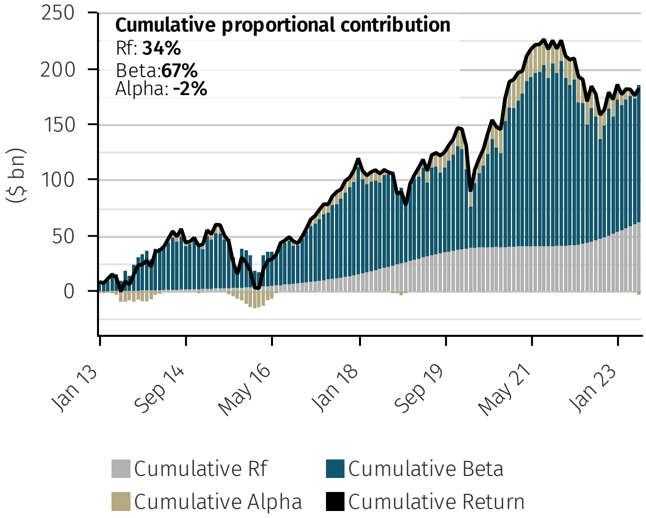
Equity L/S



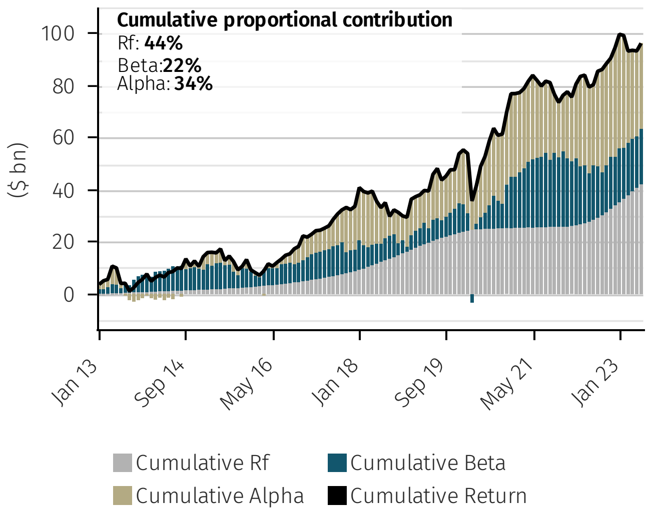
Event



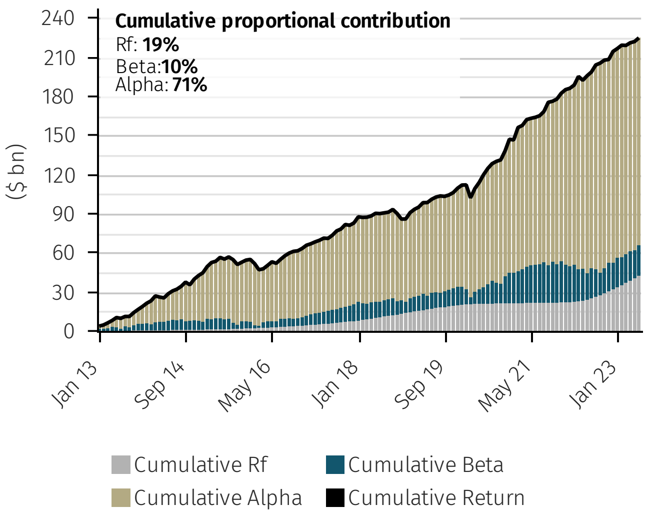
Long biased



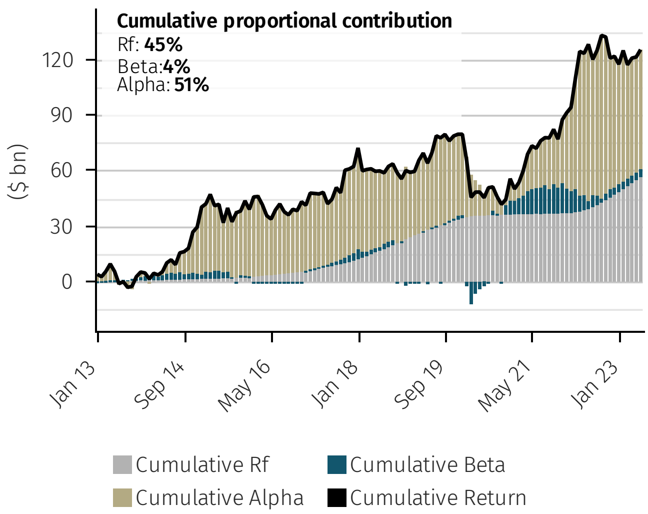
Macro



Multi-Strategy



Quant



Risk Free Rate = period average of 3-month LIBOR-SOFR Risk Free Rate 4.55%. Source: Bloomberg.
**HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.*
Source: Aurum Hedge Fund Data Engine.

Performance dispersion and correlation

Overall industry dispersion between the top and bottom decile has fallen dramatically, as has general risk-asset volatility. Dispersion now sits at a level more in line with levels observed pre-COVID. Relative to the last ten years. dispersion in areas such as multi-strategy, credit and arbitrage sit well below the average. Somewhat bucking the trend is macro and long biased, where dispersion has risen steeply in the last few months.

Top decile industry rolling 12-month performance was lower in early 2023, before rising back to where it was at the start of January 2022, sitting just below 20%. Bottom decile performance has risen significantly, as markets have become less challenged and been generally easier to navigate from an 'extremes' perspective.

As the bar chart clearly shows on page 18, there were some hedge fund strategies that exhibited larger levels of absolute performance dispersion between top and bottom deciles. Long-biased persistently has higher levels of top-to-bottom decile dispersion, but this is not limited to the performative extremities, the funds generally tend to run with some of the highest hedge fund volatilities, which also drives this figure. A significant driver is also the divergence of underlying sub-strategy performance. For example, long-biased has long – equity as well as long – div growth and long – commodities, which have constituents both at the top and bottom of ranking of industry sub-strategy performers over the period. Equity l/s also contains sub-strategies ranging from the recent high-performing ELS – US, ELS – global and ELS – sector sub-strategies, through to the poorer ELS – APAC and ELS – FEMN strategies. This category also contains a very wide breadth of strategies with different approaches and tolerances to volatility, as such one would always expect a very wide performance range. By contrast, looking at the strategies with the lowest performance spread, you have credit at 14.8%, which sits well below its long-term average. Underlying credit funds typically run with a much lower volatility, as does the multi-strategy sub-category.

It is interesting to focus on some specific months. In January, when markets had a massive rally in both equities and bonds, you quickly see some interesting patterns. Areas such as long biased and equity l/s show very large performance dispersion, in spite of it being a generally very strong month for those strategies. Arbitrage, due to its disparate composition of sub-strategies tends to persistently have high levels of dispersion in the extremes relative to the interquartile range, with tail hedging strategies having done very poorly in January in particular. The event strategy can also see some extreme moves when comparing the top/bottom decile performers relative to the central quartiles, this has been driven by the surge in the performance of event – activist, something that was also clear in June, when it rallied 5.2%, significantly outperforming the other event sub-strategies. The other key month to look at is March, where you had the failures of the banks and the extreme moves in rates. The monthly candlestick chart shows that March was indeed a month where the bottom decile performing hedge funds were also the worst, touching -5%. If one cross checks that to the sub-strategies, you can see that – while it was indeed a very tough month for macro – the bottom decile of macro hedge funds that month did not hit the -5% level. In fact, no master strategy's bottom decile got that bad apart from quant, where the bottom decile lost over 7.5%, and the bottom quartile lost over 5%. The industry poor performers in March therefore were almost entirely driven by the quant space, specifically quant – CTA and quant – macro. In fact, if one looks at the quant strategy analytics pack you can see that bottom decile CTAs were losing over 9% in March, bottom quartile over 7%. Quant – macro bottom decile lost 6%.

It is also worth commenting on the differential between the median and average returns relative to the weighted average headline returns used to represent the Aurum strategy indices. For example, while equity l/s was the best performing master hedge fund strategy overall, it ranks behind long-biased strategies from both a mean and median perspective, indicating that larger equity l/s funds were driving headline performance. The median long-biased fund was up 5.0% with the median equity l/s fund up just 2.5% (quite a material difference from the +6.1% figure, indicating that it has been the largest funds that have outperformed). In previous years, it has often been the case that multi-strategy has been highlighted as a top performer, but with a caveat that both mean and median returns were significantly below the weighted average, highlighting how a small number of massive multi-strategy funds were responsible for driving those returns – with many of those funds now subject to onerous liquidity terms or hard-closed altogether. On the other side of the spectrum, you have macro, where the headline figure (up 0.7%) is significantly below the median and mean figures. Again – some very large macro names have had poor performance and dragged down the overall figure, while median performance is more in line with the overall industry.

Correlations between different strategies have exhibited some significant changes over the last 12 months, with a noticeable increase in correlation to bonds.

The overall industry flashes 'red' (high correlation) from a broader perspective relative to the rally in equities. Long biased unsurprisingly showing the most extreme correlations to both bonds and equities, although equity l/s, event, and credit also show a similar relationship. Consistent with the comments about alpha and beta inherent in different strategies, you have areas such as arbitrage, quant and multi-strategy showing negative and/or low correlation to other strategy areas and risk assets. The first half of last year serves as a stark reminder of what can happen when taking exposure to particular funds/styles of trading that take significant market risk-factor exposure. Those strategies that tend to be more relative value in nature (multi-strategy, arbitrage, statistical arbitrage, fixed income relative value), or directional strategies with no systemic bias to be long or short (such as macro and CTA), have typically been more resilient to periods of volatility.

Equally weighted returns.
HF Composite = Aurum Hedge Fund Data Engine Equally Weighted Composite Index
Source: Aurum Hedge Fund Data Engine.

One should also pay close attention to the average intra-strategy correlation chart (page 22). This can give a quantitative measure of the extent of homogeneity of funds within each strategy bucket. So, while long biased and activist managers may have been strong performers in recent years, as a cohort they exhibit among the highest levels of cross-correlation. The event – M&A sub-strategy has seen markedly higher cross correlation in recent years. This is due to the elevated levels of common factor risk or beta to the markets. As such, the constituents of these groups are more likely to move in lockstep. In the case of event M&A, during periods where the incidence of deals being challenged/mergers coming under stress, is relatively low, the cross-correlations are lower. In the more recent past, with the stress on the space in 2020 and more recently the number of large, widely-held deals that have had issues, you have seen far less differentiation across the event – merger space.

The areas where Aurum focuses are more towards the left side of the chart, i.e. macro (primarily global macro and commodities), quant (statistical arbitrage, short-term futures/quant macro and quant volatility), multi-strategy and trading-oriented event. These strategies are more heterogeneous and are where one can potentially add more value from fund and manager selection. They have also demonstrated lower correlation to risk-assets and other sub-strategies.

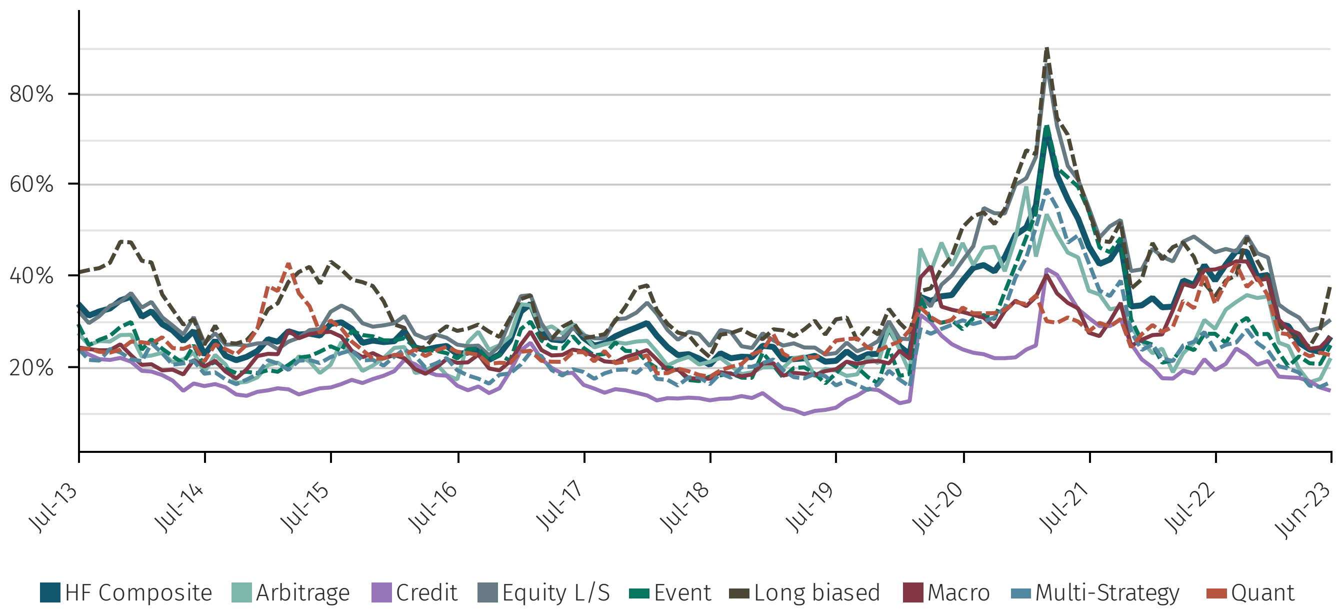
STRATEGY DISPERSION – ROLLING SPREAD 10-90th PERCENTILE

Strategy	Average 10 year	Jun-23	Current differential from 10 year average
Macro	25.45%	26.64%	4.67%
Long biased	36.73%	38.26%	4.17%
Event	26.34%	24.76%	-6.01%
Equity L/S	34.39%	30.36%	-11.70%
HF Composite*	**30.75%**	**26.67%**	**-13.27%**
Quant	26.43%	22.58%	-14.57%
Arbitrage	26.79%	21.94%	-18.10%
Credit	18.62%	14.80%	-20.50%
Multi-Strategy	23.27%	16.67%	-28.37%

Equally weighted returns.
HF Composite = Aurum Hedge Fund Data Engine Equally Weighted Composite Index
Source: Aurum Hedge Fund Data Engine.

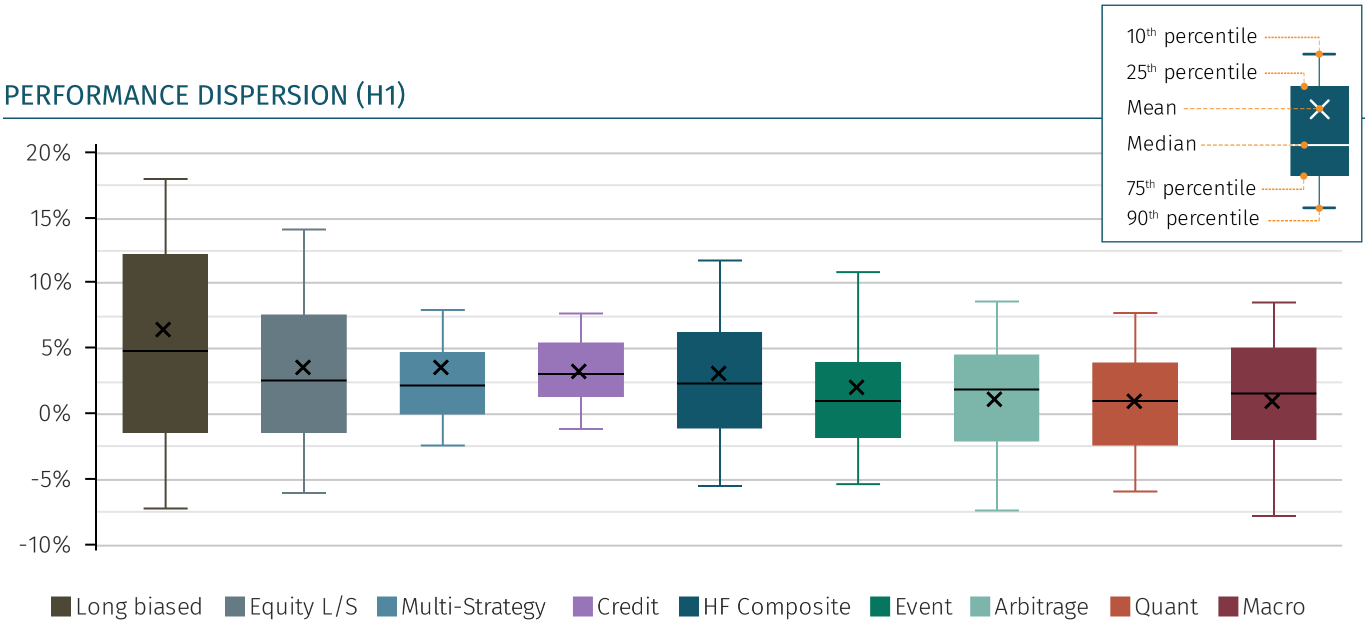
HEDGE FUND INDUSTRY DISPERSION – 12M ROLLING RETURN

10th – 90th PERCENTILE 12M ROLLING PERFORMANCE SPREAD



Equally weighted returns.
HF Composite = Aurum Hedge Fund Data Engine Equally Weighted Composite Index
Source: Aurum Hedge Fund Data Engine.

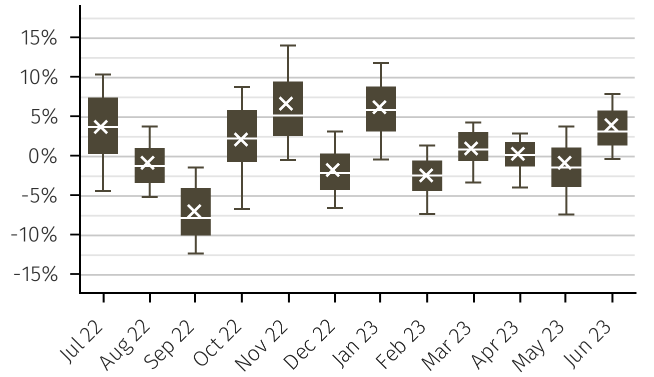
PERFORMANCE DISPERSION (H1)



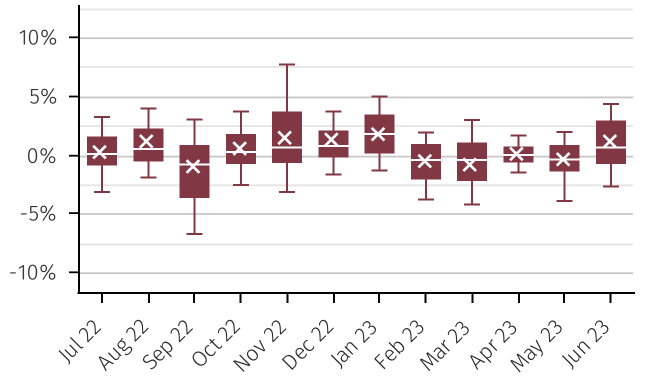
NET MONTHLY RETURN DISTRIBUTION

Equally weighted returns.
HF Composite = Aurum Hedge Fund Data Engine Equally Weighted Composite Index
Source: Aurum Hedge Fund Data Engine.

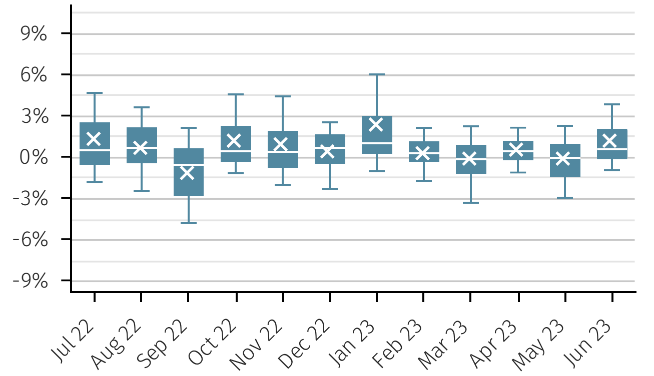
Long biased



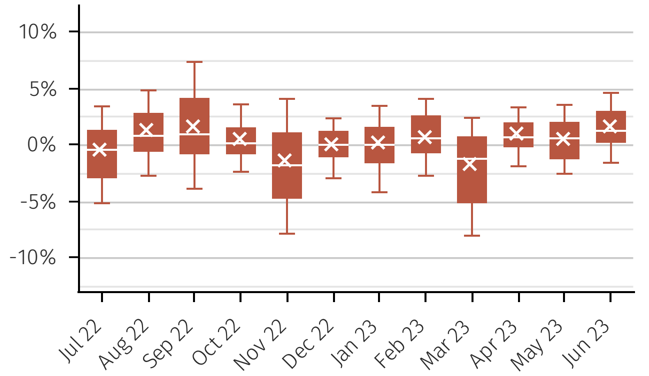
Macro



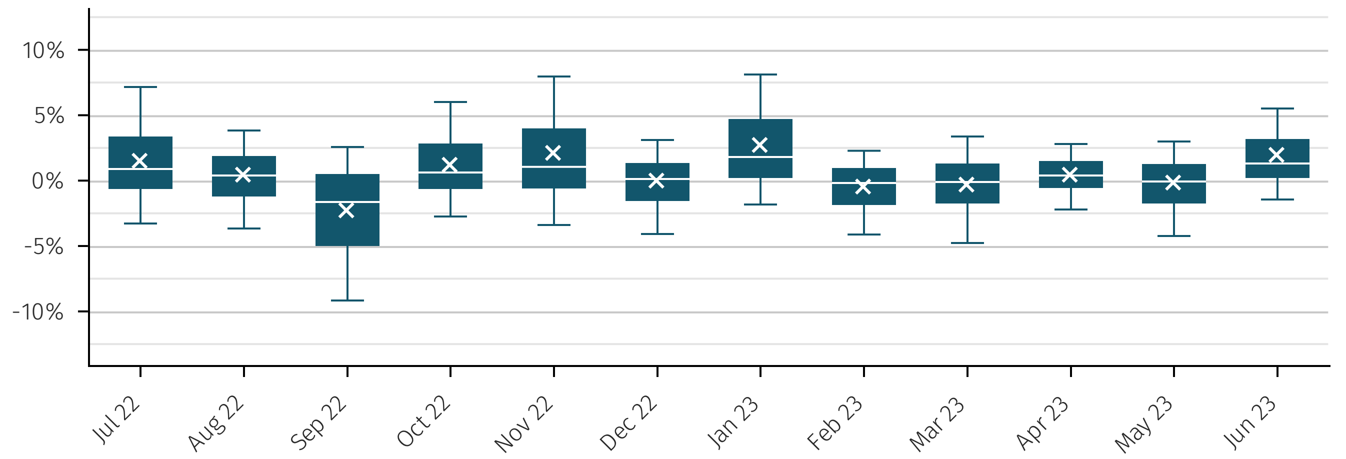
Multi-Strategy



Quant



HF Composite



Equally weighted returns.
HF Composite = Aurum Hedge Fund Data Engine Equally Weighted Composite Index
Source: Aurum Hedge Fund Data Engine.

Correlation

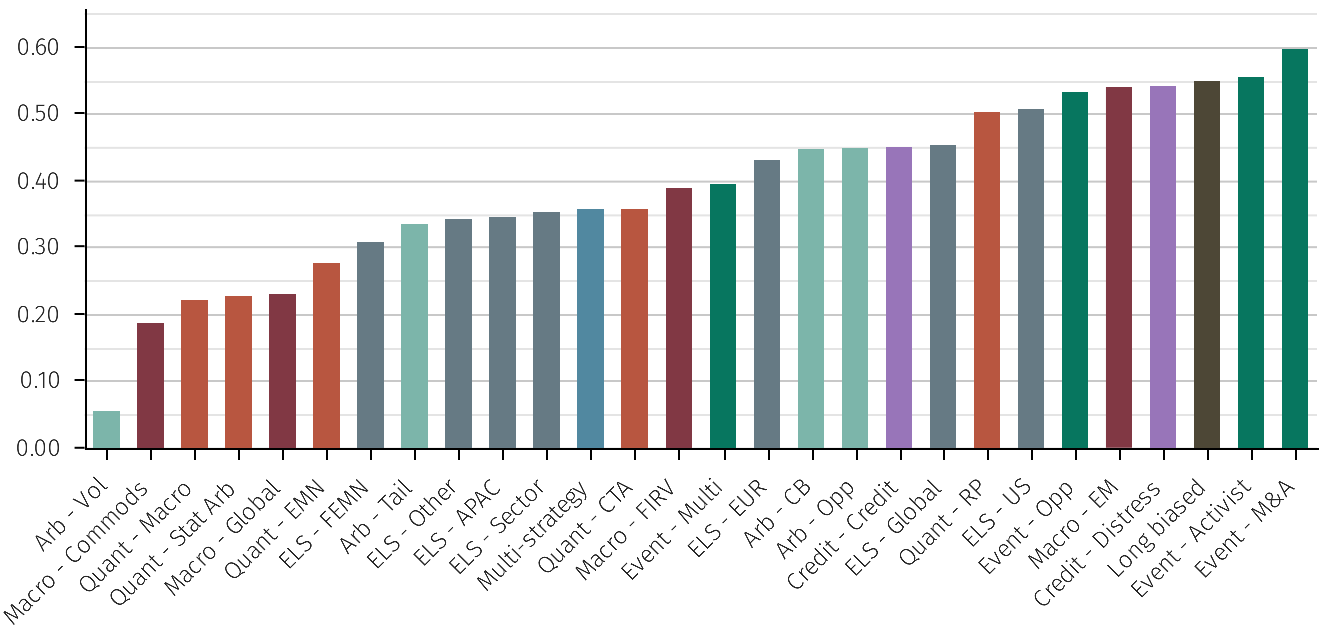
CORRELATION MATRIX (5 YR) PERIOD TO JUNE 2023

	Arbitrage	Credit	Equity L/S	Event	Long biased	Macro	Multi-Strategy	Quant	HF Composite	Bonds	Equities
Arbitrage		0.43	0.21	0.31	0.08	0.38	0.60	0.32	0.34	-0.12	-0.01
Credit			0.75	0.86	0.77	0.79	0.73	0.31	0.89	0.37	0.70
Equity L/S				0.92	0.90	0.67	0.69	0.19	0.93	0.51	0.90
Event					0.92	0.78	0.75	0.32	0.97	0.41	0.90
Long biased						0.67	0.54	0.12	0.90	0.66	0.97
Macro							0.73	0.46	0.83	0.22	0.62
Multi-Strategy								0.50	0.80	0.10	0.50
Quant									0.41	-0.35	0.14
HF Composite*										0.41	0.88
Bonds**											0.57
Equities***											

CORRELATION MATRIX (1 YR) PERIOD TO JUNE 2023

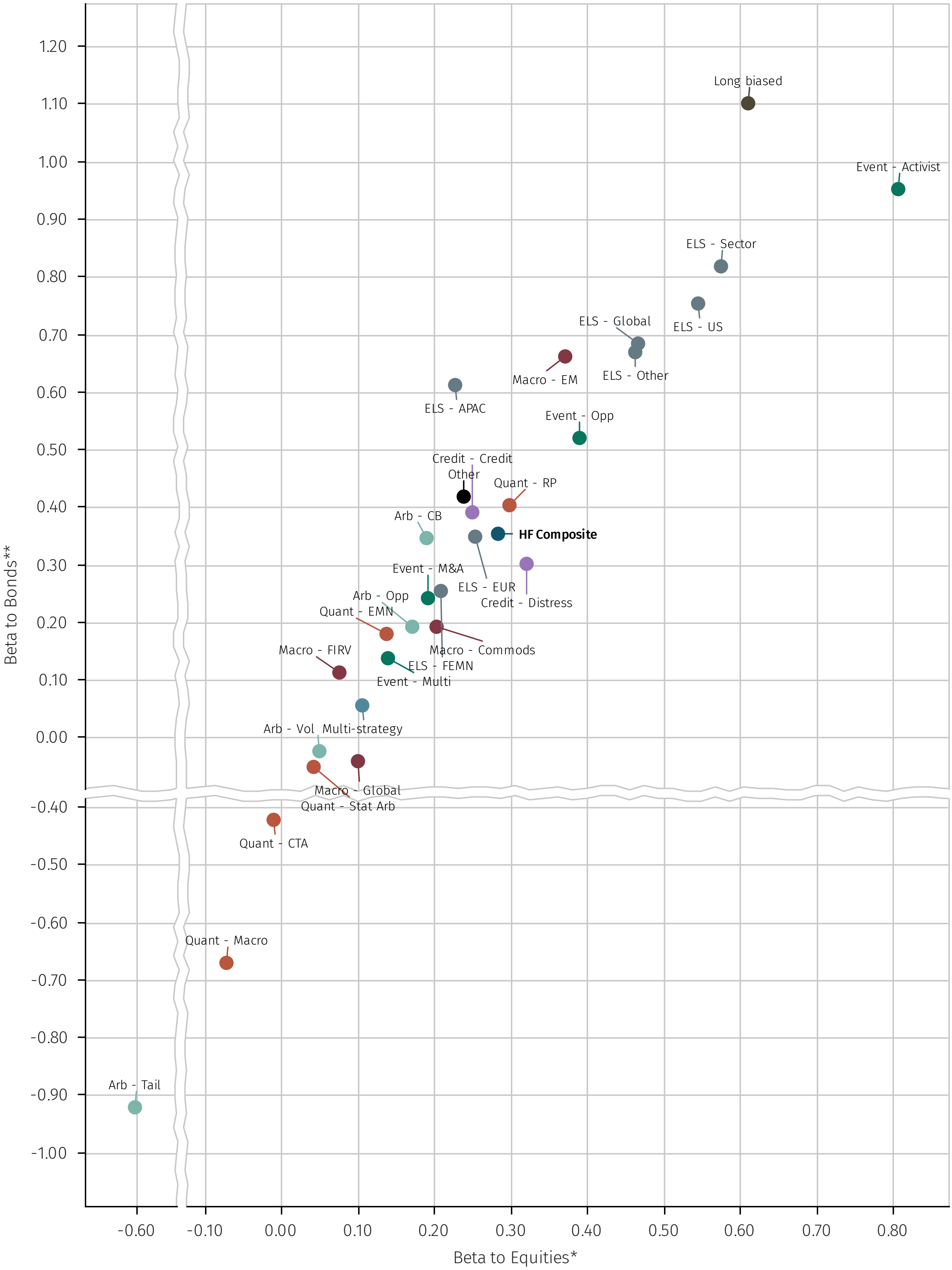
	Arbitrage	Credit	Equity L/S	Event	Long biased	Macro	Multi-Strategy	Quant	HF Composite	Bonds	Equities
Arbitrage		-0.37	-0.64	-0.59	-0.81	0.25	0.57	0.70	-0.48	-0.75	-0.83
Credit			0.89	0.82	0.78	0.47	0.18	-0.46	0.94	0.64	0.76
Equity L/S				0.86	0.93	0.27	-0.11	-0.70	0.92	0.80	0.93
Event					0.86	0.44	0.11	-0.46	0.95	0.62	0.89
Long biased						0.10	-0.25	-0.80	0.84	0.89	0.97
Macro							0.69	0.20	0.53	-0.11	0.10
Multi-Strategy								0.40	0.18	-0.34	-0.25
Quant									-0.44	-0.87	-0.70
HF Composite*										0.63	0.86
Bonds**											0.82
Equities***											

AVERAGE INTRA-STRATEGY CORRELATION (5 YR)[1] - SUB-STRATEGY



*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index
** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.
[1]Equally Weighted returns. The average correlation of underlying funds within the strategy classification to all other funds within that classification. Source: Aurum Hedge Fund Data Engine.

BETA TO BONDS AND BETA TO EQUITIES (5 YR) PERIOD TO JUNE 2023 - SUB-STRATEGY



*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index
** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.
Source: Aurum Hedge Fund Data Engine.

Hedge funds vs alt UCITS

The table below presents the returns of hedge funds relative to their alternative UCITS ('alt UCITS') counterparts. As can clearly be seen, hedge funds on average, outperformed their 'younger' and cheaper cousins in 2023 January to June and significantly outperformed over a five-year period.

There are, however, some exceptions to note, the arbitrage strategy hedge funds underperformed UCITS counterparts across the period. A significant portion of this was driven by the hedge fund strategy's larger bias to tail-hedging sub-strategies, which were the worst performing of all hedge fund industry sub-strategies. UCITS funds in the arbitrage strategy do not have that bias.

In equity l/s, long biased and event strategies (three areas that are typically easier to replicate in a UCITS format) they outperformed their UCITS counterparts in 2023 and over the last five years. In event, with many of the alt UCITS funds more focused on merger arbitrage, and less exposed to activist or illiquid situations, they were more caught up in the difficulties of the space, versus something like event – activist, which was the top performing hedge fund sub-strategy in H1 2023.

The only alt UCITS strategy down across the period is multi-strategy. Multi-strategy is an example of where differences between hedge funds and implementation via a UCITS structure can become very stark, with the latter unable to compete from a structural perspective, as well as being hamstrung with regards to asset class mix, trading time horizon, competition for talent and restrictions on leverage.

Macro strategies have made 2.3% in UCITS, while the hedge funds were up just 0.7% (and as highlighted elsewhere in the report, the macro – global sub-strategy is down). It should be noted that the macro master strategy is a highly heterogenous mix of funds, some of which operate in relatively simple and easy to execute strategies (which may lend themselves to a UCITS structure), while others have more barriers to entry and are highly complex from an operational or financing perspective. This year, some very large macro funds ran experienced sharp negative performance in March. It's interesting to note the underperformance here, although five-year performance still significantly favours hedge funds.

It is less surprising to see credit hedge funds outperforming alt UCITS credit funds, as the hedge funds have much more ability to short and have a structure offering more flexibility to trade the asset class than alt UCITS have the scope to do.

The underperformance of quant hedge funds to their alt UCITS counterparts is a surprise for the period. Quant has been significantly impacted from a negative perspective by CTAs, although areas like quant – EMN, quant – macro, and quant – CTA have performed relatively poorly. One area where UCITS are able to often compete on a level footing from a structural perspective is in areas such as CTAs and – in some cases – quant macro. Given that it has been a tough period for those sub-strategies, the outperformance, albeit marginal over the period, by UCITS is a plus for the space. However, over a longer time horizon, the underperformance is still material.

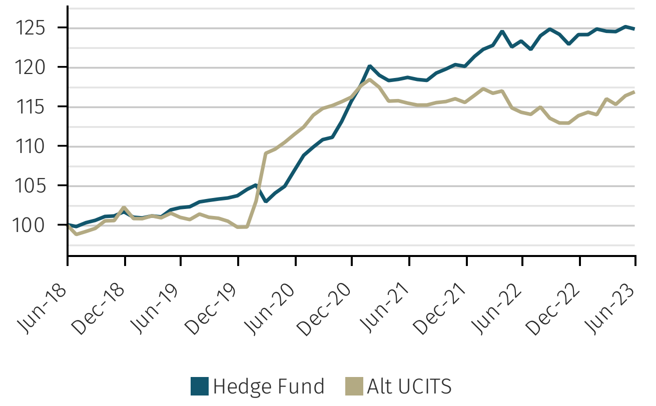
HEDGE FUNDS VS ALT UCITS RETURNS

	2023 Returns		5Y Returns		5Y Vol		5Y Sharpe		AUM ($bn)		Fund Count	
	Hedge Fund	Alt UCITS	Hedge Fund	Alt UCITS	Hedge Fund	Alt UCITS	Hedge Fund	Alt UCITS	Hedge Fund	Alt UCITS	Hedge Fund	Alt UCITS
Arbitrage	0.57%	2.67%	4.54%	3.17%	2.93%	3.91%	0.90	0.34	72.0	6.9	118	16
Credit	3.89%	1.90%	3.26%	1.31%	6.98%	7.33%	0.23	-0.04	404.9	29.9	515	47
Equity L/S	6.12%	4.07%	4.78%	2.30%	8.96%	4.89%	0.36	0.11	584.0	51.3	1,097	129
Event	3.19%	0.16%	5.97%	2.02%	7.05%	4.61%	0.60	0.05	281.3	13.9	215	30
Long biased	4.01%	3.04%	4.13%	1.80%	11.45%	7.35%	0.25	0.03	406.5	23.9	382	54
Macro	0.69%	2.25%	4.33%	1.63%	4.80%	7.40%	0.52	0.00	329.2	37.8	329	44
Multi-Strategy	2.89%	-1.71%	9.23%	2.01%	3.93%	5.41%	1.80	0.05	415.1	33.2	172	18
Quant	1.21%	2.09%	3.40%	0.43%	5.30%	4.21%	0.31	-0.32	377.1	16.1	448	62
HF Composite*	**3.39%**	**2.49%**	**4.74%**	**1.77%**	**5.91%**	**5.00%**	**0.50**	**0.00**	**2940.4**	**220.0**	**3,498**	**416**
Bonds**	**2.27%**		**-1.25%**		**6.89%**		**-0.42**		-	-	-	-
Equities***	**11.92%**		**5.56%**		**18.20%**		**0.29**		-	-	-	-

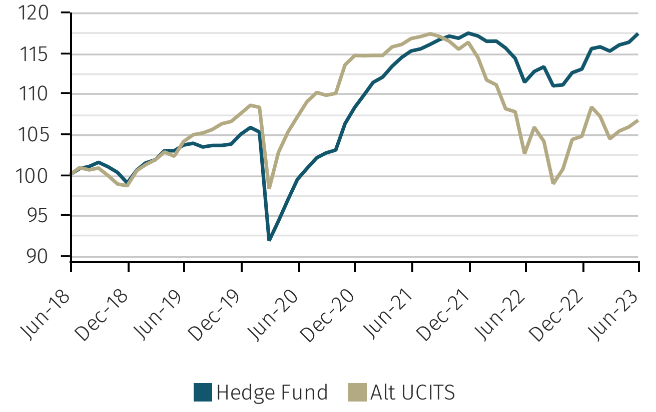
*HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index.
* Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). * Equities = S&P Global BMI.
Source: Aurum Hedge Fund Data Engine.

HEDGE FUNDS VS ALT UCITS (5 YR)

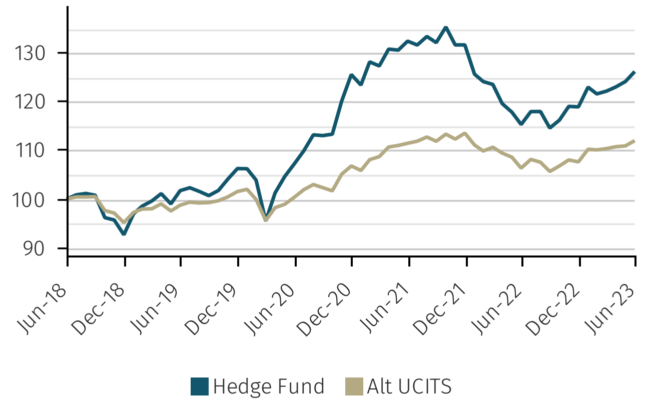
Arbitrage



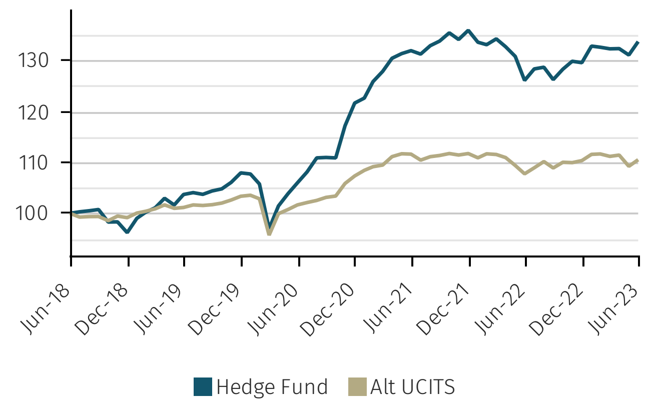
Credit



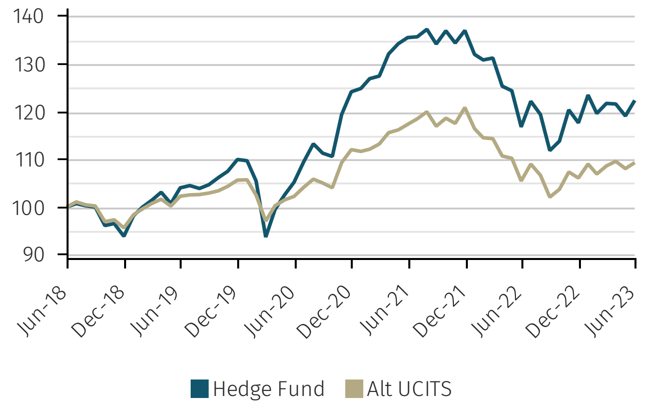
Equity L/S



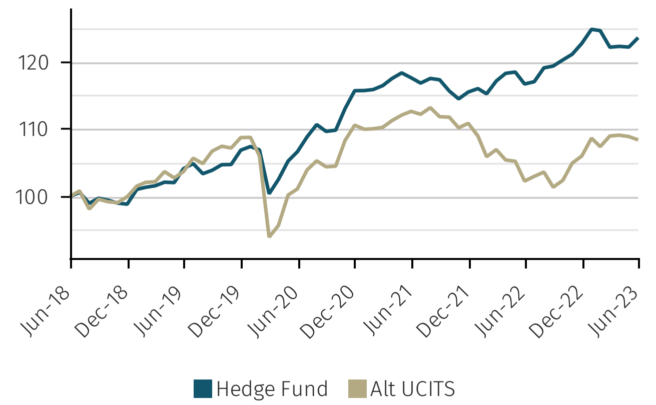
Event



Long biased

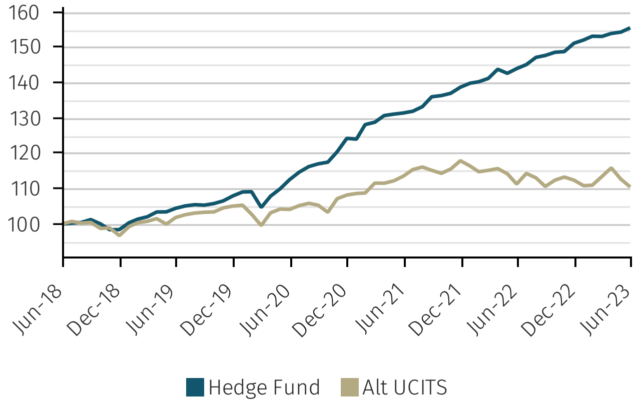


Macro

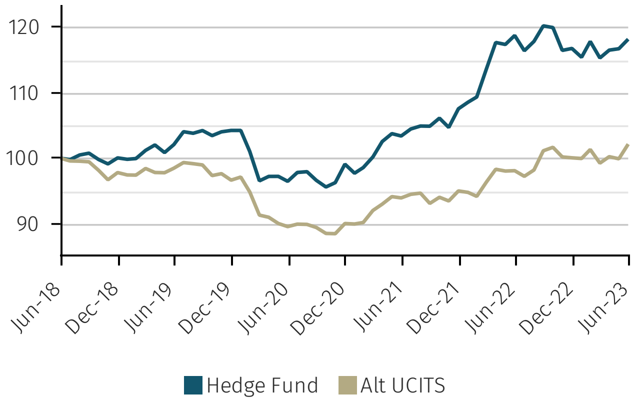


**HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index*
*** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.*
Source: Aurum Hedge Fund Data Engine.

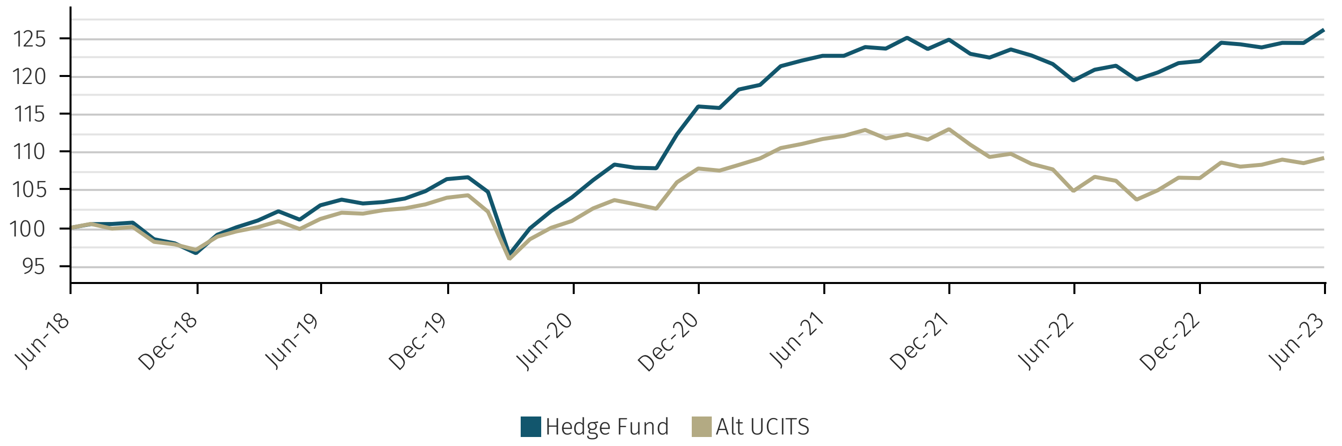
Multi-Strategy



Quant



HF Composite



**HF Composite = Aurum Hedge Fund Data Engine Asset Weighted Composite Index*
*** Bonds = S&P Global Developed Aggregate Ex Collateralized Bond (USD). *** Equities = S&P Global BMI.*
Source: Aurum Hedge Fund Data Engine.

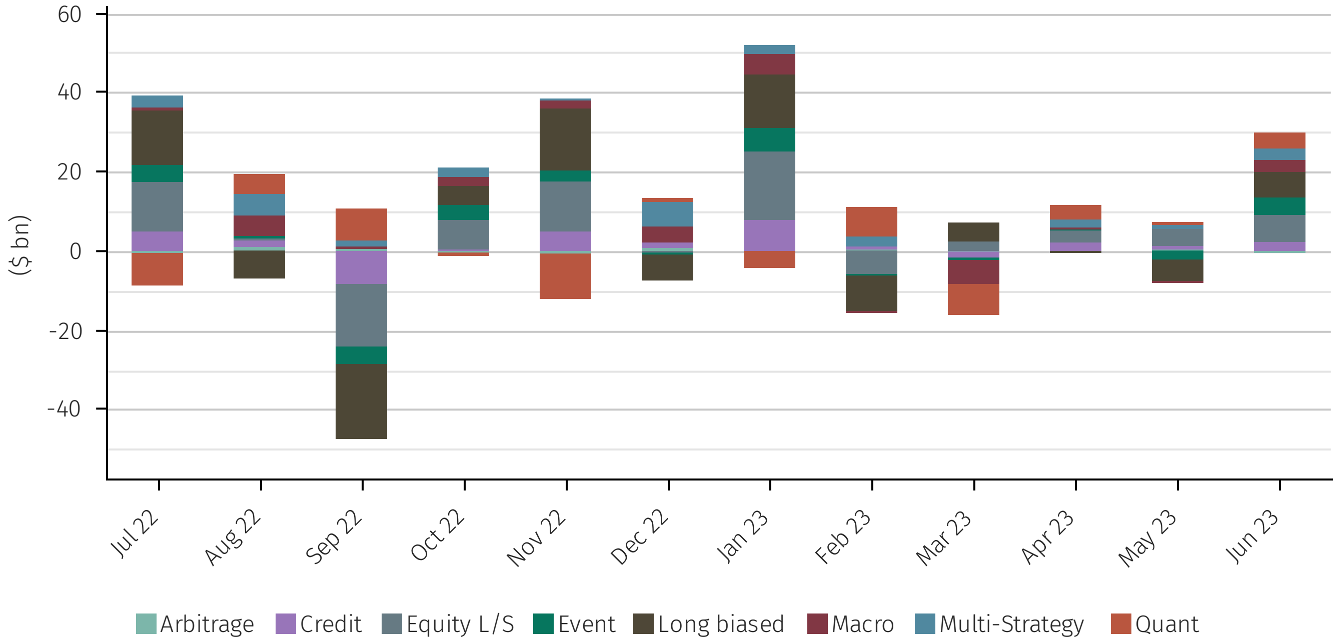
Dollar extraction

This part of the report describes, in dollar terms, how much – as a result of performance – has been generated or lost by particular strategies and the hedge fund industry as a whole.

There was significant positive performance (or 'dollar generation') across equity l/s, credit, multi-strategy, long-biased and event strategies. Equity l/s relative industry share of total dollar generation was well above its relative share of industry AUM as at June 2023.

Relative to their asset size, macro, quant, and arbitrage all significantly underperformed in terms of % of total industry P&L generated vs. % total industry AUM.

NET DOLLAR PERFORMANCE (1 YR)



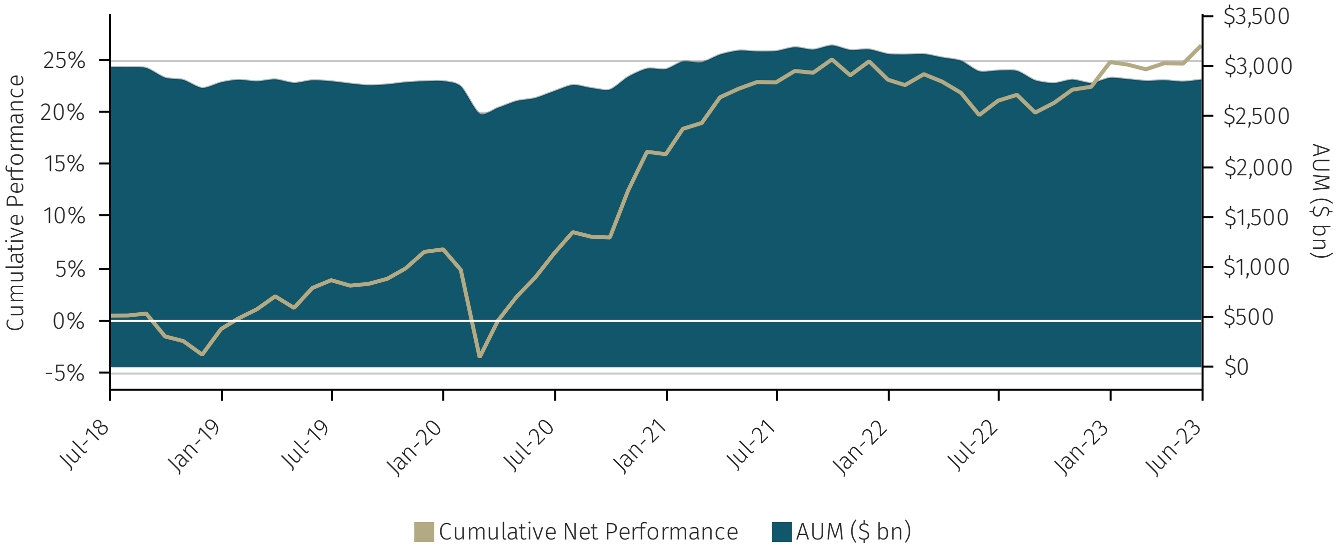
DOLLAR RETURNS AND AUM RELATIVE TO THE INDUSTRY (H1)*

Note - When the hedge fund industry composite has a negative return for the reporting period, those strategies that contributed negative returns will show on the chart as a positive contribution to the overall negative return. Strategies that have generated positive returns during a period of losses for the hedge fund composite are displayed as a negative contribution to the overall negative return.

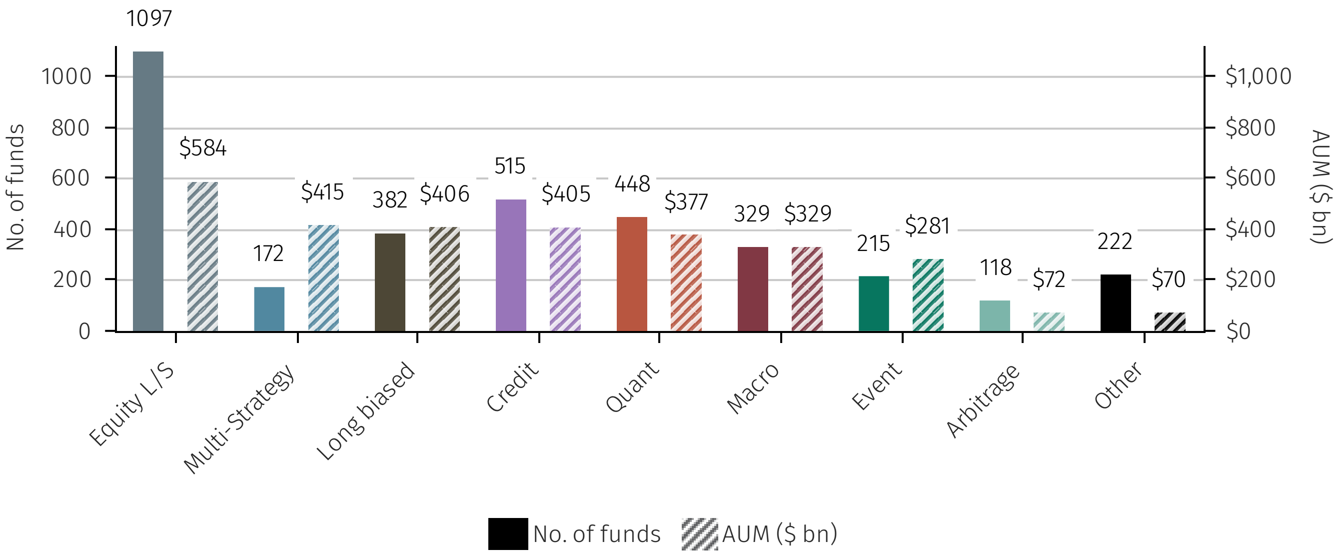
Industry assets and flows

Industry assets have seen net outflows from redemptions. However, total hedge fund industry assets have marginally risen due to positive P&L generation; as indicated above, that has primarily been driven by equity l/s, with smaller contributions coming from long-biased (primarily equity funds), credit, multi-strategy, and event (primarily from activist funds). Only arbitrage and multi-strategy funds have seen investor inflows in H1.

HF COMPOSITE ASSETS (5 YR)*



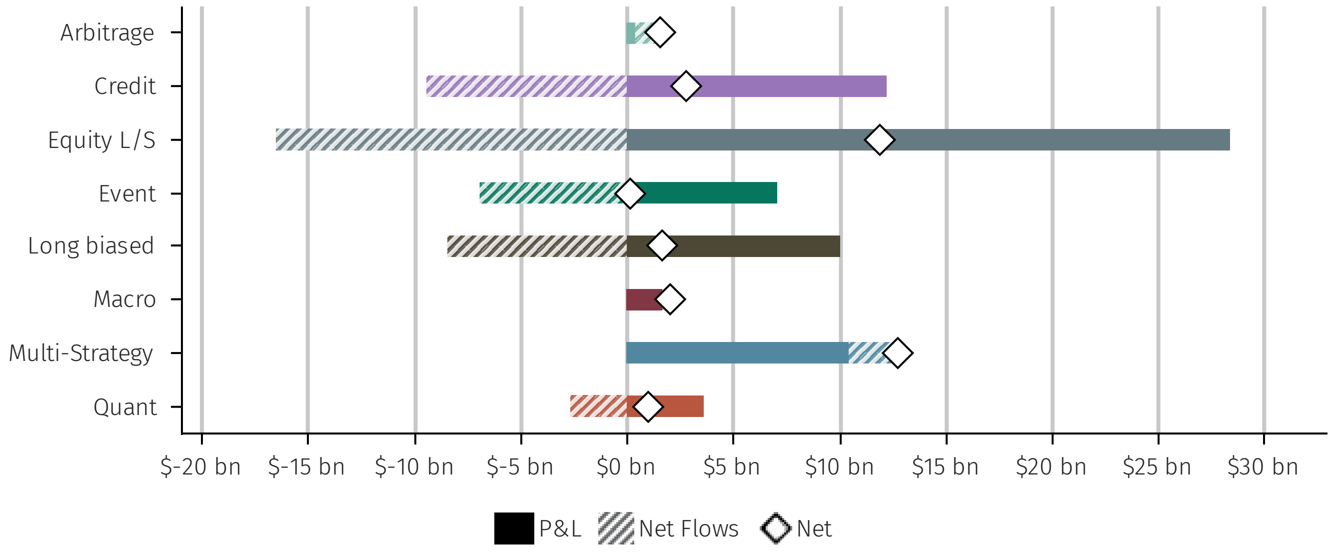
NUMBER OF FUNDS AND AUM



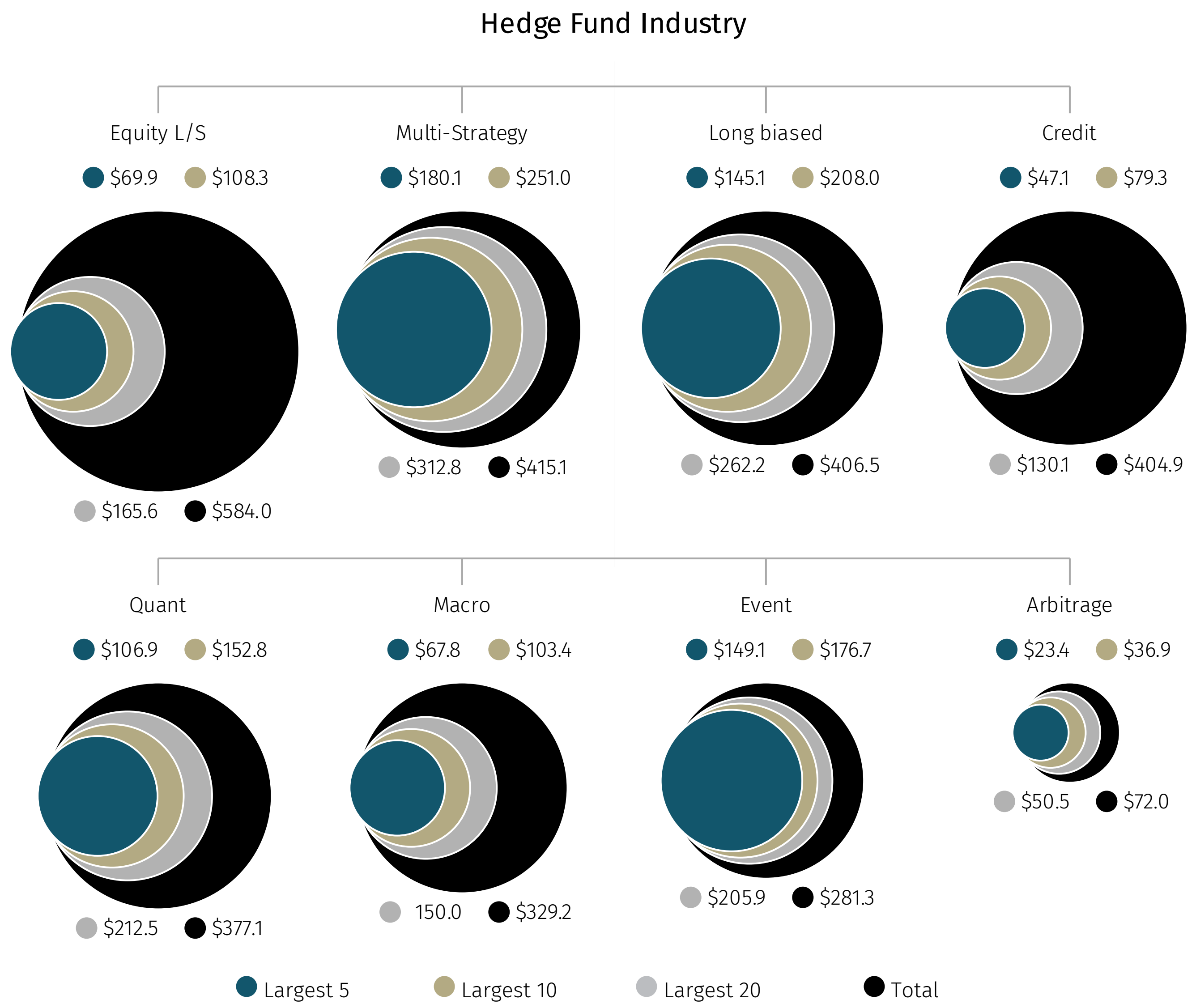
*Includes funds which are active but have not report to Aurum within the last 12 months

Source: Aurum Hedge Fund Data Engine.

CHANGE IN AUM (H1)



SUB-STRATEGY FUND CONCENTRATION ($ BN)



Strategy analytics packs

Links to individual strategy chart packs below. Our full strategy page including all the chart packs can be found here: https://www.aurum.com/hedge-fund-strategy-definitions/

- Arbitrage strategy analytics packs
- Credit strategy analytics packs
- Equity long short strategy analytics packs
- Event strategy analytics packs
- Long biased strategy analytics packs
- Macro strategy analytics packs
- Multi-strategy analytics packs
- Quant strategy analytics packs

Terms and conditions

	Median Redemption Notice (Days)	Median Redemption Frequency	Weighted Avg. Redemption Total (Days)[1]	Weighted Avg. Management Fee	Weighted Avg. Performance Fee
Arbitrage	**30**	**Monthly**	**104**	**1.38%**	**19.57%**
Convertible bond	45	Quarterly	106	1.29%	18.11%
Opportunistic	60	Quarterly	147	1.29%	21.28%
Tail protection	30	Monthly	44	1.16%	18.04%
Volatility arbitrage	28	Monthly	84	1.67%	19.38%
Credit	**60**	**Quarterly**	**160**	**1.22%**	**16.84%**
Credit	60	Quarterly	139	1.12%	15.44%
Distressed	90	Quarterly	225	1.55%	19.68%
Equity l/s	**45**	**Monthly**	**130**	**1.46%**	**18.86%**
Asia Pacific equity long/short	30	Monthly	131	1.56%	20.18%
European equity long/short	30	Monthly	81	1.26%	19.30%
Fundamental equity market neutral	30	Monthly	94	1.64%	18.71%
Global equity long/short	45	Quarterly	175	1.46%	19.06%
Other long/short	38	Monthly	74	1.34%	16.58%
Sector long/short	45	Quarterly	137	1.59%	18.01%
US long/short	45	Quarterly	122	1.30%	19.15%
Event	**60**	**Quarterly**	**190**	**1.48%**	**19.38%**
Activist	90	Quarterly	196	1.50%	18.93%
Merger arbitrage	30	Monthly	67	1.30%	17.78%
Multi-strategy	60	Quarterly	225	1.47%	19.95%
Opportunistic	60	Quarterly	166	1.54%	19.47%
Long biased	**30**	**Monthly**	**75**	**0.86%**	**10.49%**
Commodities	2	Daily	13	0.67%	4.58%
Diversified growth	1	Daily	36	0.58%	0.96%
Equities	30	Monthly	122	1.19%	16.80%
Long biased - other	30	Monthly	96	1.47%	17.30%
Macro	**30**	**Monthly**	**95**	**1.45%**	**18.60%**
Commodities	30	Monthly	67	1.43%	18.50%
Emerging markets	30	Monthly	73	1.12%	14.60%
Fixed income relative value	30	Monthly	113	1.55%	22.93%
Global macro	30	Monthly	99	1.54%	18.08%
Multi-Strategy	**45**	**Monthly**	**153**	**1.83%[2]**	**20.76%**
Quant	**5**	**Monthly**	**50**	**1.62%**	**17.69%**
CTA	3	Weekly	30	1.33%	15.24%
Quantitative equity market neutral	30	Monthly	71	1.36%	15.00%
Quant macro/GAA	6	Monthly	28	1.95%	19.33%
Risk premia	4	Weekly	27	0.67%	5.70%
Statistical arbitrage	30	Monthly	111	2.43%	25.09%

1. Weighted Avg. Redemption Total (Days) is the weighted Avg. of both redemptions notice days and redemption frequency days.
2. Some funds operate a pass through fee structure in addition to, or instead of, a traditional management fee. Aurum does not currently include funds which operate a pass through structure within this management fee calculation (even if they also separately charge a management fee), accordingly the weighted average management fee above excludes funds with this fee structure.

Definitions

ARBITRAGE

Strategies that look to benefit from mispricing's of the same instrument/asset or extremely closely related instrument. The strategy covers the following areas: convertible bond arbitrage, tail protection, volatility or opportunistic trades in this area, including but not limited to other areas such as capital structure arbitrage, ETF arbitrage or arbitrage of other closely related instruments.

Convertible bond (Arb – CB):
Traditionally the strategy looks to isolate mispriced components of convertible securities in order to capture a return to fair value. CB's essentially consist of a bond plus an embedded call option on the equity. Key valuation components relate to the credit (bond component) and the volatility (option and equity component). Those components other than the component believed to be mispriced are typically hedged in order to isolate the mispricing.

Tail protection (Arb – Tail):
Strategy that explicitly look to benefit from large market moves, typically either in the form of large spikes in volatility (either from implied or realised volatility), or from significant moves in the underlying spot price (long gamma) or a particular asset or assets. Some tail protection strategies also look to benefit from sudden/large moves in spread relationships, which are typically tight, but which can move to extremes during periods of stress.

Volatility arbitrage (Arb – Vol):
Traditionally the strategy looks to identify the mispricing of volatility. Funds may incorporate exposure to factors such as implied volatility, realised volatility, dividends, skew, term structure and correlation. Funds may be biased short, long or neutral to Greek exposures such as delta, vega and gamma.

Opportunistic (Arb – Opp):
Strategy that look to benefit from inconsistent/mis-pricing of the same instrument/asset or extremely closely related instruments/assets. Opportunistic arbitrage strategies typically have the flexibility to trade across multiple areas, but tend to specialise in a combination of volatility trading, convertible bonds and capital structure arbitrage trades. But they may also focus on other niche areas in order to capitalise upon perceived mis-pricing. The narrow arbitrage focus is why they are better considered as part of arbitrage, rather than in the broader multi-strategy classification.

CREDIT

Strategies that focus the vast majority of their trading on debt instruments, or instruments that are far more 'debt-like' in nature.

Credit (Credit - Credit):
Typically focusing upon investments in higher yielding (but still performing) non-investment grade securities, primarily corporate - and sometimes sovereign - debt. The strategy is typically expressed with a net long bias. More relative value-oriented credit funds take a more balanced long/short approach (although still typically have a net long bias). Relative to longs, the short positions may be outright, related by sector, and/or within the same capital structures. Whilst not heavily trading oriented (given the associated costs) the strategy is more event-focused than passive and as such tends to have shorter investment horizons than something like the Distressed category. Returns are generated from a blend of coupon income and capital appreciation due to spread tightening (or widening on shorts).

Distressed (Credit – Distress):
Strategy typically invests in non-investment grade corporate - and sometimes sovereign - debt, which is frequently stressed (e.g., performing, but priced at a significant discount to par) or defaulted (e.g., where a balance sheet restructuring will occur). Some also invest in deeply discounted and/or subordinate structured product. Time horizon is typically longer dated.

EQUITY LONG/SHORT

Investing in global stocks, both on the long and short side. Most funds have a fundamental bias, value and/or growth-oriented investment theses. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

US equity long/short (ELS – US):
Investing the all or the vast majority of their portfolio into US stocks, both on the long and short side. Most funds have a fundamental bias, value and/or growth-oriented investment theses. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

Asia pacific equity long/short (ELS – APAC):

Investing the all or the vast majority of their portfolio into Asian Pacific stocks, both on the long and short side. Most funds have a fundamental bias, value and/or growth-oriented investment theses. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

European equity long/short (ELS – EUR):
Investing all or the vast majority of the portfolio in European stocks, both on the long and short side. Most funds have a fundamental bias, value and/or growth-oriented investment theses. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

Global equity long/short (ELS – Global):
Investing the portfolio in global stocks, both on the long and short side. The fund is agnostic to country/region to maintain flexibility. Most funds have a fundamental bias, value and/or growth-oriented investment theses. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

Fundamental equity market neutral (ELS – FEMN):
Investing the portfolio in stocks, both on the long and short side. To classify as 'equity market neutral' funds are expected to run with a very tight net exposure bias, which over the longer term should be close to zero. Note, different funds use different methodologies, e.g., some may run to be 'beta neutral', while others may be cash neutral (with a tolerance band around the zero level). The distinguishing characteristic is that such funds are typically very low net at all times, but some may run with varying degrees of factor or industry exposure, while others may have more stringent risk parameters around such exposures. Most funds have a fundamental bias, value and/or growth-oriented investment theses. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

Sector (ELS – Sector):
Investing the portfolio in a specific sector, both on the long and short side. The funds may or may not be agnostic to country/region to maintain flexibility, however sector specialist funds tend to be US focused given that it is a very deep/broad market with sectors that are large enough to accommodate diversified sector specific portfolios. Most funds have a fundamental bias, value and/or growth-oriented investment theses. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

Other l/s (ELS – Other):
Long short equity investing, which does not readily fit into the other classification taxonomy.

EVENT DRIVEN

Broad strategy category covering funds that invest in securities of companies facing announced and anticipated corporate events. This includes, but is not limited to: M&A, Spin-offs, Company restructurings, some distressed situations (although if this is the dominating part of the strategy it will be classified as 'credit-distressed'). The strategy identifies mispriced securities with favourable risk/reward characteristics based upon differentiated views of value-unlocking catalysts, event-probabilities and post-event valuations.

Activist (Event – Activist):
Activist hedge funds invest in companies that they feel are undervalued and the managers then attempt to drive the value creation process by influencing corporate management to undertake initiatives that they feel will benefit shareholders. This can include a number of activities, including but not limited to: capital structure restructuring, change in operating strategy/capital allocation, change in the board/management, change in corporate governance or the outright sale of the enterprise. Funds typically own large stakes in the companies they invest in as investors need to be a large enough shareholder to influence management.

Merger arbitrage (Event – M&A):
Strategy typically involves taking positions in the securities of a company being acquired in a merger or acquisition. Due to the risk of a deal-break as well as time value of money, the securities typically trade at a discount to the deal-price/value (deal-spread). Primary risk is when deals break, which can lead to asymmetric losses to the downside. Funds will typically trade cash deals and also share-for-share deals, where the fund will short the securities they expect to receive upon deal closure (locking in the deal spread). In addition to M&A, managers may also invest in other situations that involve process driven catalysts.

Multi-strategy (Event - Multi):
Whilst these are funds investing across multiple strategies, they are characterised by their overwhelming focus on the broad event-driven space and therefore placed in their own category. Such funds consistently generate a significant portion of their P&L from the primary event-driven investing categories: merger arbitrage, soft-catalyst event-driven situations (spin-offs, spin-outs, share- class arbitrage, non-mandatory shareholder elections, index-rebalancing, holdco/subsidiary relative value trade, high probability potential merger 'targets', etc.) and/or activist investing. Some funds may also allocate a portion of

their capital to Distressed (which can fall under the category of event- driven investing), however, if the majority of the risk is in consistently in the distressed arena, it falls under the 'credit/distressed' categorisation.

Opportunistic (Event - Opp):
Has some similarities to the event-driven 'multi-strategy' classification however, as the name suggests, these funds tend to be very opportunistic and dynamically adjust their capital allocation between various event-driven trades. These funds tend to also be more value and soft catalyst oriented. Such funds may also place 'special situations' trades, looking to unlock value taking various positions in the capital structure (i.e., could be debt or equity). Opportunistic funds have the flexibility to trade all areas of the event space (M&A, Activist, soft catalyst and distressed investing) but will do so on an opportunistic basis, they also may concentrate a large portion (or even at times all) of the risk in a specific area, unlike event driven - multi-strategy funds, which are typically always allocated across multiple sub-strategies at all times.

LONG BIASED

Long only or overwhelmingly long-biased strategies. Covers multiple asset classes.

Equities (Long - Equity):
Long only or overwhelmingly long-biased equity strategies. Such funds still have a hedge-fund structure. Funds that are more 'mutual fund'-like are excluded from this category. Most funds have a fundamental bias, value and/or growth oriented investment theses are typically adopted. Some managers may also be more tactical/technical in their approach, taking into account flows, positioning on the street and market dynamics as part of the investment decision making process.

Diversified growth (Long - Div Growth):
A hedge fund where the majority of the capital is deployed in strategies within the long-biased categories.

Commodities (Long - Commods):
Funds that take long positions across the commodity complex (e.g., precious metals, base metals, basic materials, soft commodities, agriculture, oil, gas, power, coal & utilities product, etc.) on a passive or actively managed basis. The manager may specialises in one or more of these sub-sectors.

Other (Long - Other):
Long biased investing, which does not readily fit into the other classification taxonomy.

MACRO

Macro funds take positions (can be either directional or relative-value) in currencies, bonds, equities and commodities, based on fundamental and qualitative judgements. Investment decisions can be based on a manager's top-down views of the world (e.g., views on economy, interest rates, inflation, government policy or geopolitical factors). Relative valuations of financial instruments within or between asset classes can also play a role (or be the dominant part) in the investment process. Primary areas of focus are the liquid instruments of G10 countries, although they may also include emerging markets.

Fixed income relative value (Macro – FIRV):
Fund generates all or a substantial majority of the P&L/risk from relative movements across fixed income assets and their derivatives. Funds are typically looking to profit from arbitrage, mean-reversion or positive carry. Most traders aim to be either duration neutral or 'risk neutral' (i.e., matching DV01 across long and short positions). Most managers incorporate some use of leverage as an integral part of the strategy. Note - that some managers in the space may also trade a smaller portion of the book in more 'classic' directional macro trades, but funds in the FIRV category are generating a minority of the risk from this area.

Commodities (Macro – Commods):
These funds are primarily focused on trading commodity futures and options from both the long and short side. They can occasionally include the tactical use of equities, currencies, or fixed income instruments, but commodity futures/options should make up the bulk of the risk. The manager is typically looking for longer term trends and supply/demand imbalances within and between commodity markets.

Global macro (Macro – Global):
Macro funds take positions (can be either directional or relative-value) in currencies, bonds, equities and commodities, based on fundamental and qualitative judgements. Investment decisions can be based on a manager's top-down views of the world (e.g., views on economy, interest rates, inflation, government policy or geopolitical factors). Relative valuations of financial instruments within or between asset classes can also play a role (or be the dominant part) in the investment process. Primary areas of focus are the liquid instruments of G10 countries, although they may also include emerging markets. Macro managers that do not have a particular specialisation in areas such as commodities, emerging markets or fixed income relative value fall under this more general classification.

Emerging markets (Macro - EM):
Macro funds take positions (can be either directional or relative-value) in currencies, bonds, equities and commodities, based on fundamental and qualitative judgements. Investment decisions can be based on a manager's top-down views of the world (e.g., views on economy, interest rates, inflation, government policy or geopolitical factors). Relative valuations of financial

instruments within or between asset classes can also play a role (or be the dominant part) in the investment process. Primary areas of focus are the emerging markets.

MULTI-STRATEGY

A hedge fund where the capital is deployed across multiple strategies and asset classes. Funds are typically extremely diversified and employ multiple PMs/risk taking groups.

QUANT

Systematic strategies: Funds trade securities based strictly on the buy/sell decisions of computer algorithms. Quant strategies primarily fall into the following categories: Quantitative Equity Market Neutral, Statistical Arbitrage, Quant macro/GAA (Global Asset Allocation), CTA, and risk-premia.

CTA (Quant – CTA):

CTAs (Commodity Trading Advisors) take primarily directional positions in index level or macro instruments, such as futures or FX contracts, in a systematic fashion. Technically, a CTA is a trader of futures contracts as defined by the CFTC and historically, there were many CTAs who were not systematic; such traders are more likely to be classified as 'Global Macro'. CTAs are typically extremely systematised with straight through processing from signal generation to execution. Many, but by no means all, CTAs are trend following (using historical prices to determine predictable 'trending patterns') buying into markets where prices are rising and selling where markets are falling. When rising markets slow down/stop rising, trend-followers typically reduce its position and will eventually reverse its position into a short position, which it will hold until the market starts to rally again. The strategy is known for running with profits and cutting losses. Other models used in CTAs may include carry, seasonality, mean reverting or pattern recognition systems, models driven by fundamental data or non-traditional data sources. Some CTAs can also trade very short-term signals driven by market microstructure anomalies and patterns.

Quant macro / GAA (Quant – Macro):

GAA (Global Asset Allocation) is a systematic approach to Global Macro, with managers taking positions in global markets based on quantitative analysis, taking in information based primarily on economic data, but also incorporating price related information. The strategy is highly data and technology intensive. The positions tend to be relative value based, but they may also take directional positions in instruments such as futures, FX and baskets of equities, ETFs, swaps and other instruments. Signals may be arranged into relative value asset class models, cross asset class models / directional trades. Signals are also often classified under a number of factor headings: value, carry, momentum etc.

Statistical arbitrage (Stat Arb):

Statistical arbitrage funds typically take price data and its derivatives, such as correlation, volatility and other forms of market data, such as volume and order-book information to determine the existence of patterns. These patterns can help the manager forecast the future return of a stock, often over a relatively short timeframe. Typical signal types are: mean-reversion, momentum and event-driven. Mean- reversion looks to take advantage of the phenomenon of short-term price movements occurring due to supply/demand imbalances then moving back to an equilibrium level. Momentum models look for patterns in price data that suggest that price movements will be more persistent (i.e., trend). Other statistical arbitrage funds will look to incorporate more discrete information into their process from events (e.g., publishing of analyst earnings estimates, news flow, etc.). Whilst statistical arbitrage funds tend to focus more on 'technical' models, some may also incorporate some longer-term models that are driven by fundamental data (e.g., stock value models, growth, etc.), however, if these models are the more dominant driver of risk, then the fund is likely to be classified as Quantitative Equity Market Neutral. Statistical arbitrage funds are typically run with a very low level of beta and are market neutral, however, this may not always be the case, with some funds able to take significant directional risk; however, given the higher frequency trading nature of such funds, they are not expected to have significant correlation to markets over time.

Quant equity market neutral (Quant EMN):

Traditional QEMN strategies take fundamental data, such as analyst earnings estimates, balance sheet information and cash flow statement statistics, and systematically rank/score stocks against these metrics in varying proportions. The weights of the scores of the different fundamental data sources may be fixed or dynamic. Managers may construct a portfolio using an optimisation process or by applying simpler rules combined with risk constraints so as to create a portfolio that is dollar and/or beta neutral, and typically with minimal sector exposure. Traditional QEMN portfolios consists of exposure to: Value (looking for stocks mispriced relative to their fundamental value, e.g. based on P/E, P/B, cash flow, etc.); Quality (looking at metrics such as levels of debt, stability of earnings growth, balance sheet strength); momentum (looking at past returns over a preset timeframe ranging from days to months); however, these are common factors that are relatively easy to exploit/replicate - hence the proliferation of risk-premia products that operate in this space.

Risk premia (Quant – RP):

Hedge fund risk premia products typically seek to capture the fundamental insights of a class of hedge fund strategies (hedge fund risk premia / alternative risk premia) along with a meaningful proportion of the expected returns those strategies can earn - using a dynamic but clearly defined process. Funds typically have exposure to a well-diversified portfolio of hedge-fund premia. Premia can cover everything from equity premia (Equity market neutral - trading across value, quality, growth and momentum factors, as well as EM premia), macro premia (e.g., trend following, or EM premia), to arbitrage strategies (e.g., risk arbitrage - holding a portfolio of merger targets diversified by sector and deal type; convertible arbitrage, etc.). The strategies are typically very well understood, backed up by academic research and implemented systematically.

Bond and equity indices

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