GCM GROSVENOR

October 2024

Hedge Funds: Separating Myth from Reality

Key Takeaways

In our paper *Hedge Funds: Separating Myth from Reality,* we offer analysis on the value proposition of hedge funds in today's market environment. We do so by considering 10 common beliefs on hedge funds, and distinguishing myth from reality.

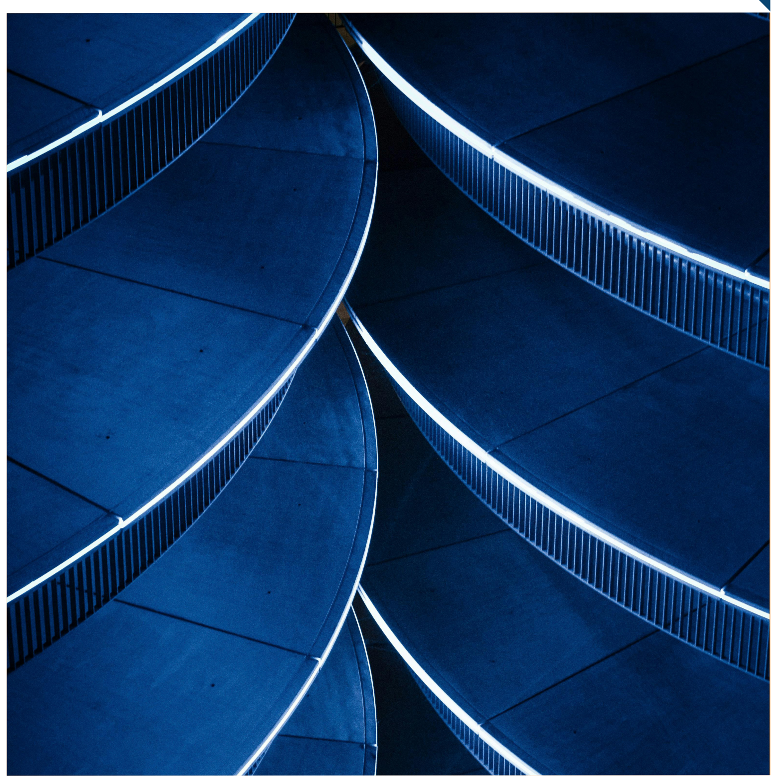
Below we present highlights from the paper by grouping the beliefs into **two broad themes:**

Theme 1: Hedge Fund Performance

Theme 2: Portfolio Role of Hedge Funds

If these highlights pique your interest, we encourage you to read the paper in its entirety as it supports our assertions with data, contains additional case studies, and adds more detailed commentary.

For more information on this topic or to connect with our Absolute Return Strategy professionals, please visit **www.gcmgrosvenor.com.**



Select risks include: *macroeconomic risk, sourcing risk, investment selection, portfolio diversification, management risk, execution of value creation plan, risks related to reliance on third parties, and risks related to the sale of investments.*

Past performance is not necessarily indicative of future results. No assurance can be given that any investment will achieve its given objectives or avoid losses. Unless apparent from context, all statements herein represent GCM Grosvenor's opinion.

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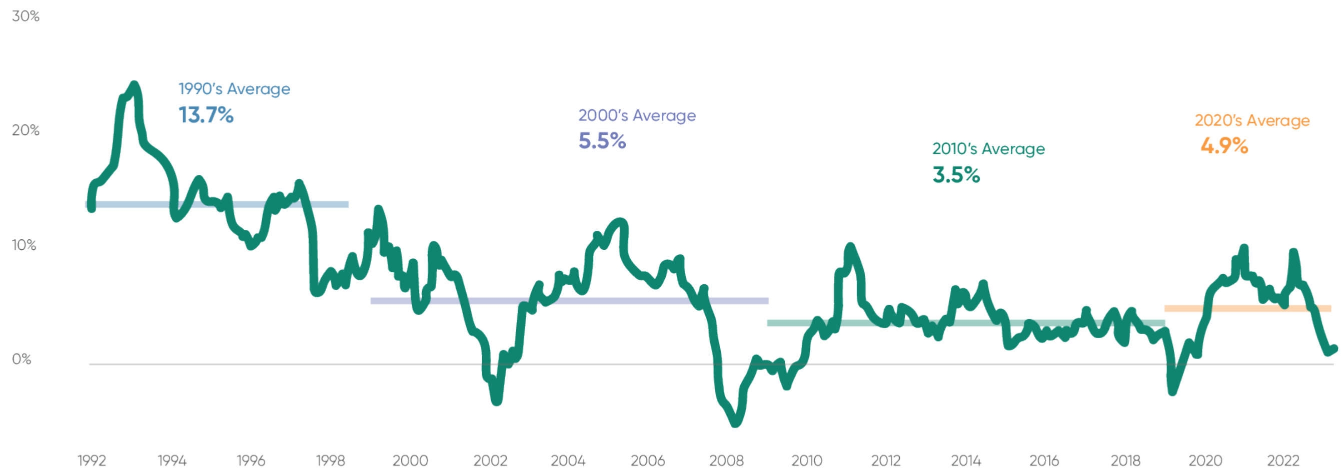
Theme 1: Hedge Fund Performance[1]

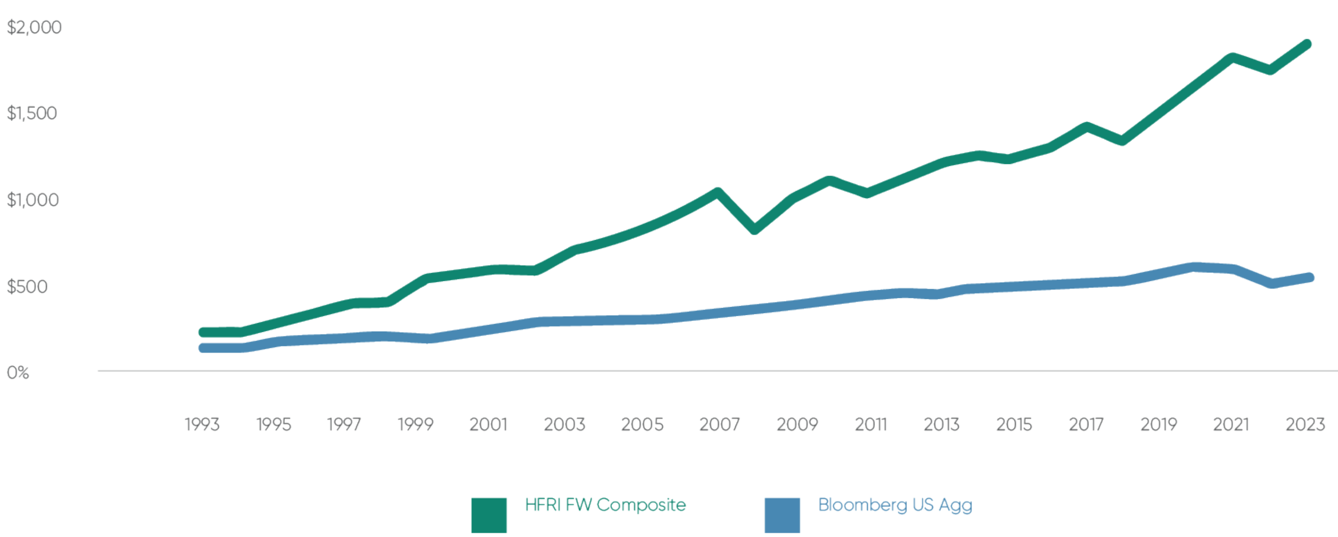
Hedge funds – in aggregate – and elite institutional-quality funds in particular, have consistently outpaced both cash and fixed income by sizable margins. While broad media headlines tend to focus on specific periods of disappointment or volatility for the industry, hedge funds have continued to offer strong absolute and risk-adjusted performance with positive convexity to traditional markets.

HEDGE FUNDS HAVE CONSISTENTLY OUTPERFORMED CASH BY AT LEAST 3.5% SINCE THE EARLY 1990'S



Source: GCM Grosvenor, HFR, and FTSE. Underlying returns from January 1990 to March 2024. Spread between the trailing 3-year annualized performance of the HFRI FW Composite Index and U.S 3-Month T-Bills.

GROWTH OF $100 IN HEDGE FUNDS VS. FIXED INCOME



Source: GCM Grosvenor, Bloomberg, HFR. Underlying returns from January 1990 to March 2024. Reflects performance of HFRI Fund-Weighted Composite and Bloomberg US Aggregate Index "Bloomberg US Agg".

1 Please review the important disclosures that follow this report.

In addition to outperforming cash and fixed income outright, hedge funds have offered strong downside mitigation to traditional asset classes. Hedge fund alpha has manifested itself in strong convexity (meaning favorable asymmetry) relative to traditional markets – where up-market capture has been significantly higher than down-market capture.

HEDGE FUNDS HAVE OFFERED FAVORABLE ASYMMETRY BY CAPTURING 73% OF THE BEST QUARTERS FOR 60/40 BUT JUST 28% OF THE WORST QUARTERS

HF Performance in Worst/Best Quarters for Traditional Assets	vs. 60/40	vs. S&P	vs. BB US Agg
Given benchmark <25th percentile			
Bmrk Return	-3%	-6%	-1%
HF Return	-1%	-1%	2%
HF Down Capture	28%	16%	--
Given benchmark >75th percentile			
Bmrk Return	7%	11%	4%
HR Return	5%	5%	2%
HF Up Capture	73%	50%	45%
HF Convexity			
Up Capture: Down Capture	2.6x	3.2x	--

Source: GCM Grosvenor, Bloomberg, S&P, HFR. Returns as of March 2024. Reflects performance of HFRI Fund-Weighted Composite versus S&P 500 "S&P", Bloomberg US Aggregate Index "BB US Agg", and 60% S&P / 40% BB US Agg "60/40".

In the full piece – see page 6 - *Hedge Funds: Separating Myth from Reality* – we walk through empirical data and illustrate properties of historical hedge fund performance that demonstrate why hedge funds serve as an attractive midpoint between highly liquid, traditional asset classes and far less liquid alternative asset classes.

We debunk several myths related to hedge fund performance in further detail, including:

Myths

Hedge funds have experienced disappointing performance since the Global Financial Crisis, which suggests that high-single digit returns are out of reach[2] (Belief #1)

It is impossible to predict which hedge funds are most likely to outperform (Belief #4)

And we affirm the following commonly held truths:

Realities

Historically, and recently, hedge funds have performed better during periods with non-zero interest rates and normal levels of dispersion (Belief #2)

Hedge funds have shown the ability to protect capital during the most painful periods for traditional assets (Belief #3)

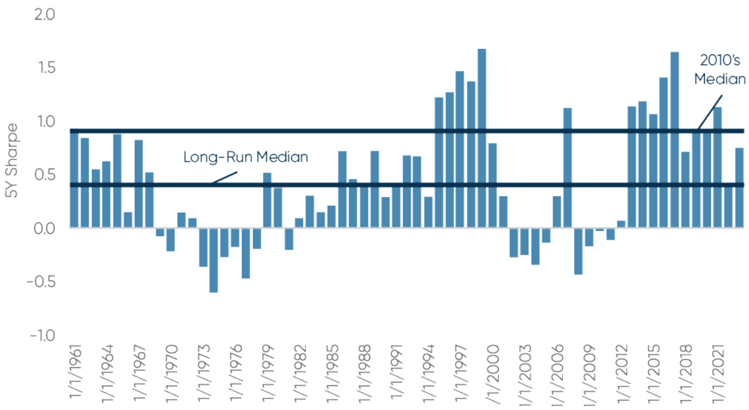
Positive security selection has driven recent hedge fund alpha – with less importance on equity beta and other common factors (Belief #8)

Theme 2: Portfolio Role of Hedge Funds

The attractive absolute and risk-adjusted performance of hedge funds makes them an important tool for a properly constructed multi-asset portfolio. The abnormally high absolute and risk-adjusted performance of long-only equities since the Global Financial Crisis may cause multi-asset investors to underestimate the efficacy of hedge funds in their portfolio. It does not require equity bearishness to see that a normalization in equity risk premia to long-run average levels would impair multi-asset portfolio performance. Investors who may have been satisfied with modest fixed income returns that were offset by outsized equity gains, in recent periods, should demand higher return from the diversifying portion of their portfolios.

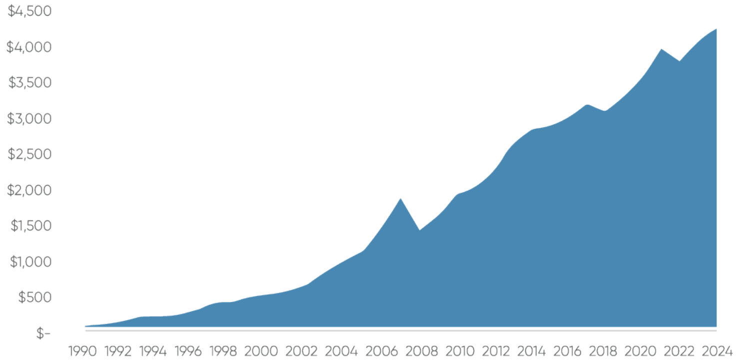
Investor flows have corroborated this value proposition – with the industry showing continuous growth since the 1990s. We see evidence of strong demand for hedge funds – especially for access to the cream-of-the-crop funds. A valued partner can help secure capacity with a number of these highly in-demand firms, and has historically improved performance outcomes.

THE SHARPE RATIO OF THE S&P HAS BEEN ELEVATED SINCE THE GLOBAL FINANCIAL CRISIS. FIGURE SHOWS ROLLING 5-YEAR PERIODS



Source: GCM Grosvenor, S&P. Underlying returns from January 1957 to March 2024. Reflects total return of S&P 500, including reinvestment of dividends.

THE HEDGE FUND INDUSTRY HAS EXPERIENCED CONSISTENT GROWTH SINCE THE 1990S



Source: GCM Grosvenor, HFR Industry Report Q1 2024.

We debunk several myths related to the portfolio role of hedge funds in further detail, including:

Myths

- Sufficient diversification can be achieved for a hedge fund program with only a few core managers / strategies; adding additional managers / strategies leads to over-diversification (Belief #6)

- All the best hedge funds are difficult to access, unwilling to take new capital, and unfriendly to LPs (e.g. high fees, low transparency, poor liquidity terms) (Belief #7)

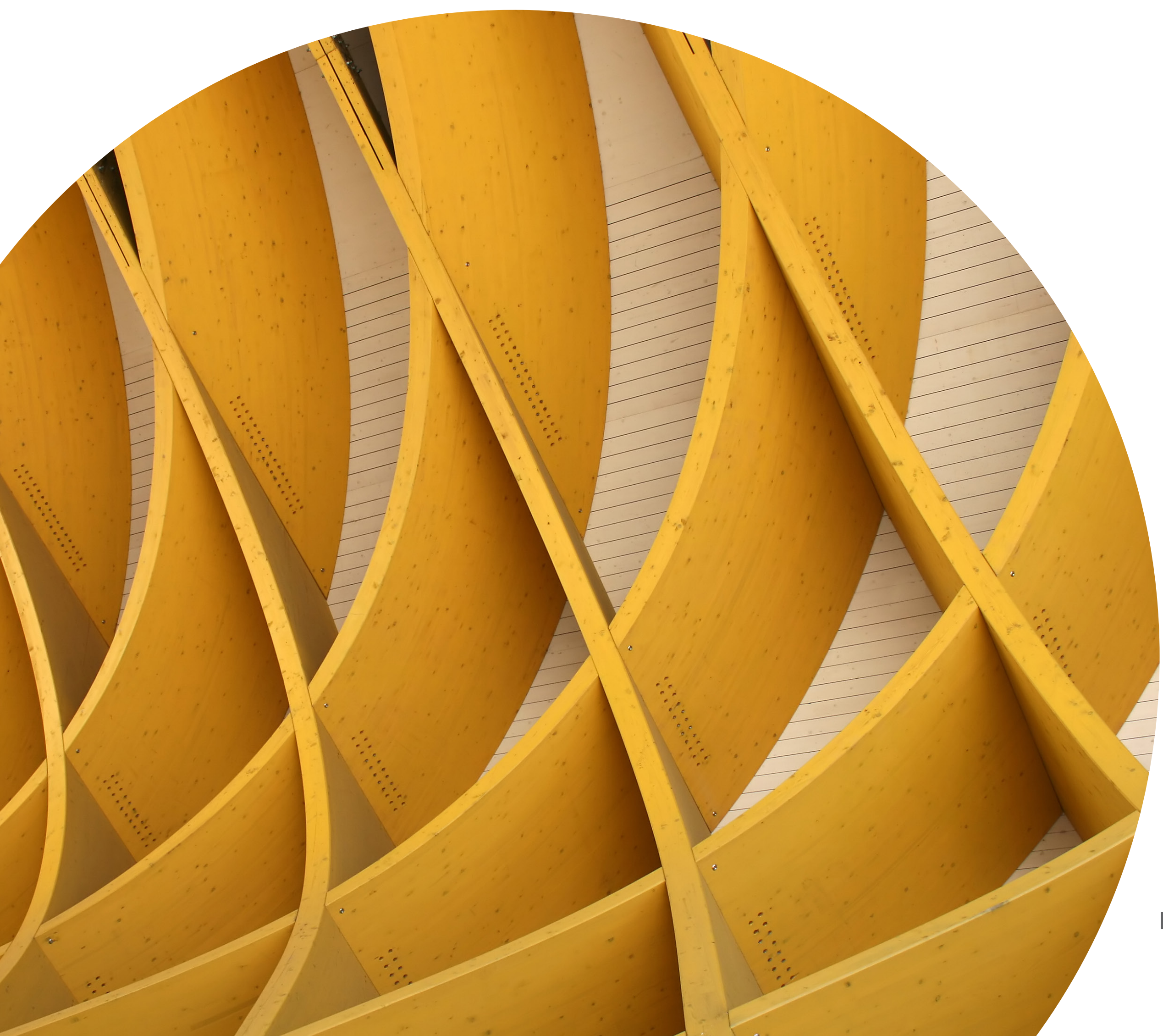
- The hedge fund industry is shrinking, and allocators are reducing allocations to hedge funds (Belief #9)

And we affirm the following commonly held truths:

Realities

- For multi-asset allocators, an allocation to hedge funds is an important component of portfolios and moves them further along the efficient frontier (Belief #5)

- Now is a particularly opportune time to invest in hedge funds, given strategy tailwinds, increased riskiness of long-only strategies, and declining capacity among certain elite global firms (Belief #10)



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Hedge Funds: Separating Myth from Reality

Narratives around hedge funds can be confusing. Investors often hear about individual funds that regularly post double-digit returns with high Sharpe Ratios, while reporting of broad hedge fund benchmark performance can appear lackluster for certain periods. Understandably, many professional investors find that attempts to bridge this gap and arrive at reasonable expectations for a hedge fund program are difficult to quantify.

We believe, however, that the core value proposition of hedge funds is more straightforward than it is often made out to be. And we are fortunate to have several decades of actual, realized data to help marry theory with practice. In this piece, we identify 10 common beliefs about hedge funds, and aim to separate myth from reality.

10 Common Beliefs on Hedge Funds

1. Myth: Hedge funds have experienced disappointing performance since the Global Financial Crisis, which suggests that high-single digit returns are out of reach.

2. Reality: Historically, and recently, hedge funds have performed better during periods with non-zero interest rates and normal levels of dispersion.

3. Reality: Hedge funds have shown the ability to protect capital during the most painful periods for traditional assets.

4. Myth: It is impossible to predict which hedge funds are most likely to outperform.

5. Reality: For multi-asset allocators, an allocation to hedge funds is an important component of portfolios and moves them further along the efficient frontier.

6. Myth: Sufficient diversification can be achieved for a hedge fund program with only a few core managers / strategies; adding additional managers / strategies leads to over-diversification.

7. Myth: All the best hedge funds are difficult to access, unwilling to take new capital, and unfriendly to LPs (e.g. high fees, low transparency, poor liquidity terms).

8. Reality: Positive security selection has driven recent hedge fund alpha – with less importance on equity beta and other common factors.

9. Myth: The hedge fund industry is shrinking, and allocators are reducing allocations to hedge funds.

10. Reality: Now is a particularly opportune time to invest in hedge funds, given strategy tailwinds, increased riskiness of long-only strategies, and declining capacity among certain elite global firms.

A caveat

As Mark Twain is often attributed as saying, "There are three kinds of lies: lies, damned lies, and statistics." We are mindful that data and statistics can be abused, and we aim to combat this by combining our empirical data analysis with economic theory to triangulate a holistic picture. No single data set or analysis is without its biases – but using a mosaic approach increases confidence that conclusions are directionally correct.

Importantly, our own hedge fund programs date back to 1971, with our multi-strategy composite beginning in 1993. While we do not present our own performance here, we have used it to confirm reasonableness of external data sets along the way.

Why it matters

We believe this analysis is highly relevant for any multi-asset investor seeking strong risk-adjusted returns. We believe the current macroeconomic setup is favorable for hedge funds – with strong absolute and risk-adjusted forward return potential, while maintaining a low sensitivity to the direction of equity and bond markets. Moreover, an adjustment to expected performance for hedge funds, given the new interest rate regime, can have a material impact on sizing decisions.

Specifically, we demonstrate how a diversified portfolio of hedge funds has consistently delivered 350 to 500[2] basis points of excess return (net, annualized) above risk-free yields, while taking little directional market or illiquidity risk, and without concentrating heavily in any single underlying manager. Especially when considering the liquidity advantages of hedge funds compared with other alternative asset classes – we believe this presents an attractive investment opportunity for investors broadly.

2 See Figure 1 for support.

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#1. Myth: Hedge funds have experienced disappointing performance since the Global Financial Crisis, which suggests that high-single digit returns are out of reach.

It is true that several reported hedge fund indices generated muted performance during the 2010s – with some annualizing at 3% to 4% returns. And to some degree this performance should not come as a major surprise. Since active management is largely a zero-sum game, it may be the case that the average hedge fund (represented by a hedge fund index) generates low alpha for certain periods, especially in a near-zero interest rate regime.[i]

However, we would note that top quartile hedge funds outperform median performers by a wide margin over all measurement periods. Moreover, performance during the 2010s' interest rate regime does not mean that high single digit returns are unrealistic over all periods. When considering historical hedge fund index performance, it is critical to i) consider performance relative to an absolute return benchmark (e.g. cash), and ii) adjust for potential biases in the indices themselves.

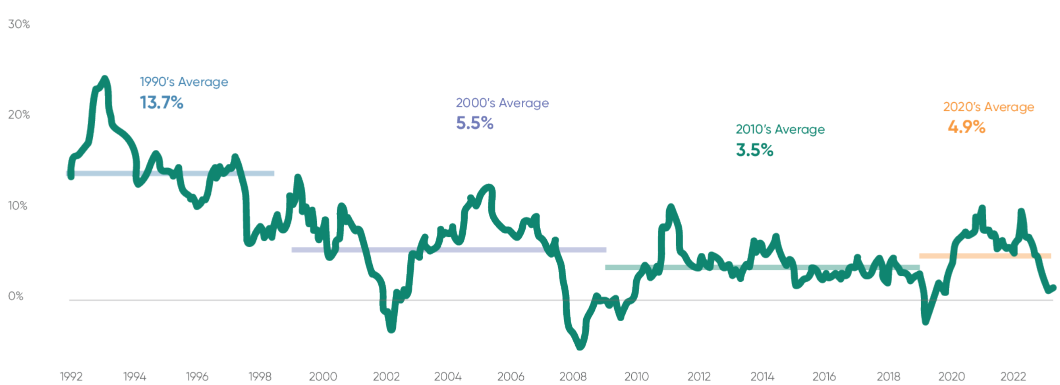
After adjusting for (i) and (ii), and as explained below, we believe that muted performance during the 2010s, alone, understates appropriate expectations for hedge funds return potential in today's higher-rate environment.

Benchmarking Top-Down Performance vs. Cash

We consider the HFRI Fund-Weighted Composite ("HFRI FW Composite") which dates back to 1990.[3]
As **Figure 1** shows, over rolling three-year periods, the index has consistently generated at least +350 basis points of excess return over cash – with significant upside in some periods. So, while total returns were more challenged during the 2010s, this largely reflects on the impact of lower cash yields. If hedge funds can continue to keep pace with – and beat – cash, then elevated yields should largely pass through to hedge fund investors and lift hedge fund returns.

Figure 1

SPREAD BETWEEN HEDGE FUNDS AND CASH



Source: GCM Grosvenor, HFR, and FTSE. Returns as of March 2024. Spread between the trailing 3yr annualized performance of the HFRI FW Composite Index and U.S 3-Month T-Bills.

3 All performance shown is net of underlying manager fees but gross of any fund-of-fund level fees.

Assessing the Quality of Hedge Fund Indices

Before relying wholly on the performance of the HFRI Fund-Weighted Composite, it is worth understanding both negative and positive biases in hedge fund indices and how one should adjust for such biases when setting forward looking return expectations. Biases in hedge fund indices have long been studied and reported on.[ii] The self-reporting nature of these indices introduces the potential for selection, backfill, and survivorship biases (e.g. namely, funds are eager to report good performance and less keen to report bad performance). This generally suggests that the performance of hedge fund indices should be adjusted downward – bringing the index's historical excess return of more than 3.5% into question.

A recently published paper, however, suggests that quite the opposite is true – and that the 3.5% excess return figure, above, may understate reasonable return-potential.

We summarize key points from the paper – "*A Bias-Free Assessment of the Hedge Fund Industry: A New Evaluation of Total Assets, Alphas, and the Flow-Performance Relation*" by Barth, Joenvaara, Kauppila, and Wermers – and note that these findings are aligned with our own decades-long experience investing in hedge funds:

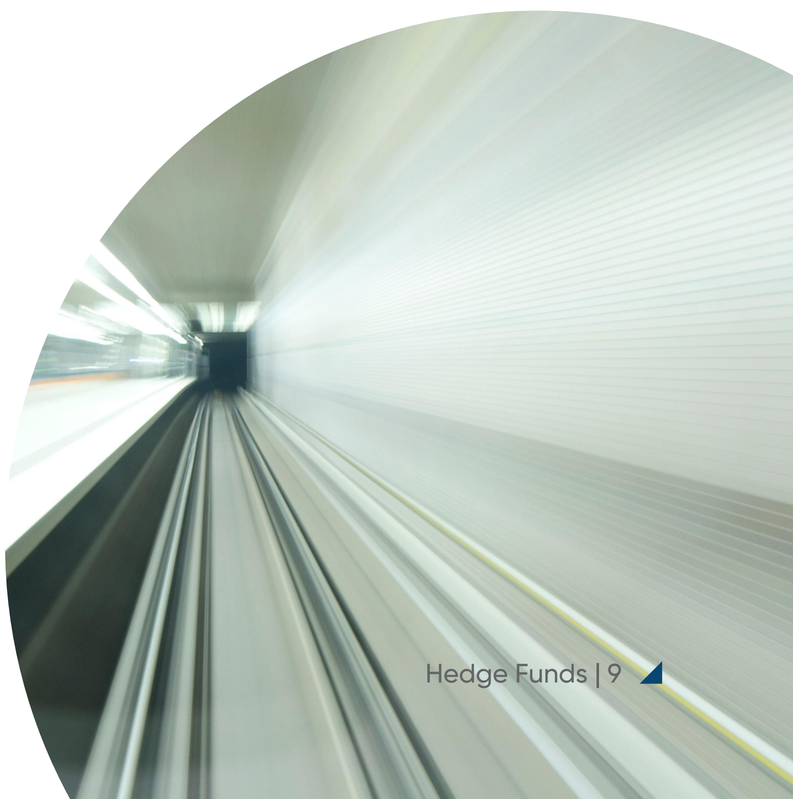
> According to Barth et al., hedge fund databases represent only about half of total hedge fund assets. This alone would not be a serious concern – unless the performance of funds that do not choose to report to index databases is markedly different from the performance of those that do choose to report. And this is exactly what the authors observe.
>
> The paper finds that from 2013 to 2019, funds that did not report to hedge fund indices generated a gross-of-fee alpha of $600 billion, while funds that did report to an index lost an aggregate alpha of $200 billion over the same period.

Similarly, the authors find that across a variety of model specifications, funds that did not report to a vendor generated an additional +300 basis points of net-of-fee alpha per year over funds that did report.

So, what might explain the performance difference between funds that do and do not report to indices?

The obvious reason is that the best performing funds are often closed to new investors, and they often have a waiting list of prospective investors. Therefore, they have no need or incentive to report their returns to hedge fund databases. Their self-reporting counterparts, on the other hand, who are seeking additional capital, rely on these databases to be noticed by potential investors who commonly screen for the best performing funds.

We, along with other professional hedge fund investors, are not particularly surprised by these results. We have seen for years that our own portfolios have relatively little overlap with most hedge fund databases – with our best performing managers often among the non-reporters. Yet we find the magnitude of the above-cited performance spread to be notable.



#2. Reality: Historically, and recently, hedge funds have performed better during periods with non-zero interest rates and normal levels of dispersion.

Tailwind of Higher Dispersion

Long/short alpha *requires* dispersion. At an extreme, if all stocks moved in lock-step – with stocks indiscriminately rising and falling regardless of company-specific fundamentals – then even the best investor could not generate alpha. It follows logically, then, that when stocks move closely together, there will be fewer/smaller stock-specific price divergences and alpha will be harder to come by.

This concept of dispersion is closely related to intra-stock correlation and volatility. Lower intra-stock correlation and higher individual stock volatility will both contribute to the level of dispersion.

Hedge funds, historically, have had positive correlation to higher dispersion (and/or lower intra-stock correlation).[iv] And as **Figure 2** demonstrates, the recent (and present) environment has been a better backdrop in this regard than the late 2010s. It bears noting, too, that the spike in dispersion and drop in intra-equity correlation preceded the global interest rate hikes. This suggests that such levels could persist even should global interest rate policies ease.

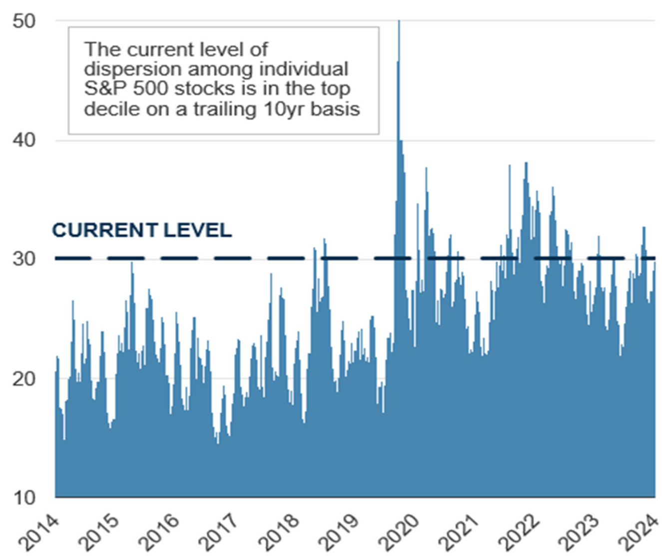
Overall, higher dispersion and lower intra-equity correlation improve the opportunity for long/short alpha. But security selection skill is required to convert this opportunity into return (or alpha). And while we cannot forecast whether today's dispersion levels will persist into the future, we i) find it a reasonable that prior levels of dispersion may have been depressed as a direct result of near-zero interest rate policy and ii) note that markets are currently pricing in very low likelihoods of rates falling to previous near-zero levels.

Figure 2

HIGHER DISPERSION AND LOWER INTRA-EQUITY CORRELATION

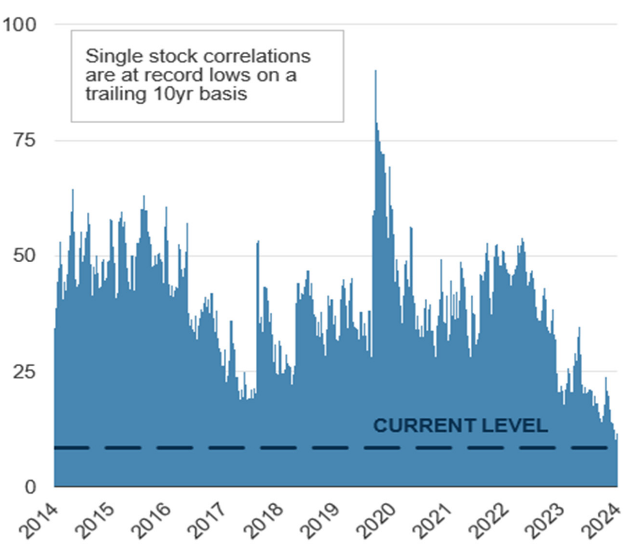
Individual Stock Dispersion is Near Record High Levels

CBOE Dispersion Index



Intra-Equity Correlations are Near Record Low Levels

CBOE 3 Month Correlation Index



Source: GCM Grosvenor, Bloomberg. Data as of July 2024.

Non-Equity Strategies

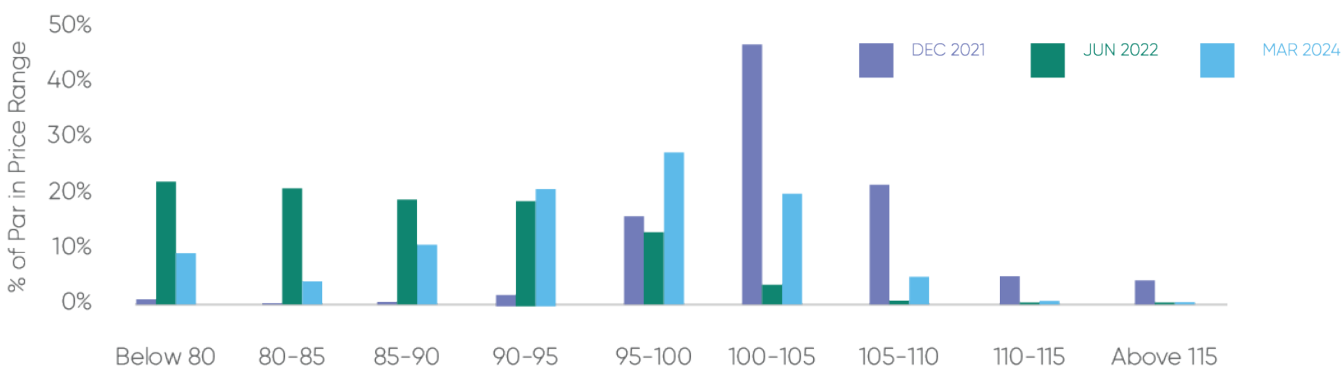
The same factors affecting equity strategies also apply to other hedge fund strategies such as Credit, Event Driven, Global Macro, and Relative Value.

Figure 3 shows the evolution of high yield spreads over the past three years. In December 2021, nearly 50% of all Bloomberg High Yield Index constituents were priced within 100% to 105% of par. By June 2022, that figure dropped below 5% and by March 2024 had normalized somewhat to 20%. This represents a meaningful increase in dispersion, and just as with our equity-oriented analysis, there is no alpha without opportunity – which only comes via dispersion.

Figure 3

HIGH YIELD CREDIT DISPERSION – *Dispersion in high yield has increased with rates*

Bloomberg High Yield Index as a percentage of per in price range



Source: Bloomberg Finance L.P. Data as of March 31, 2024.

Similarly, for diversified, global macro hedge funds, a main driver of the opportunity set is activity in global interest rates. **Figure 4** shows historical returns for PivotalPath's index of Global Macro – Discretionary hedge funds compared with changes in the MOVE Index that measures interest rate volatility (akin to the VIX for equity volatility). We see that macro funds are positively correlated to large changes in interest rate volatility, and we find this relationship to be further the case for top quartile macro funds.[v]

Compare this with **Figure 5** which shows that recent increases in the MOVE Index have pulled interest volatility out of a decade-long trough. It is easy to see that if interest rates across the globe are all near-zero, then large absolute changes in the level of rates will be hard to come by. Today's environment of significant, global interest rates represents a more typical market environment, and gives macro traders a more robust opportunity set to trade relative mispricings and volatility.

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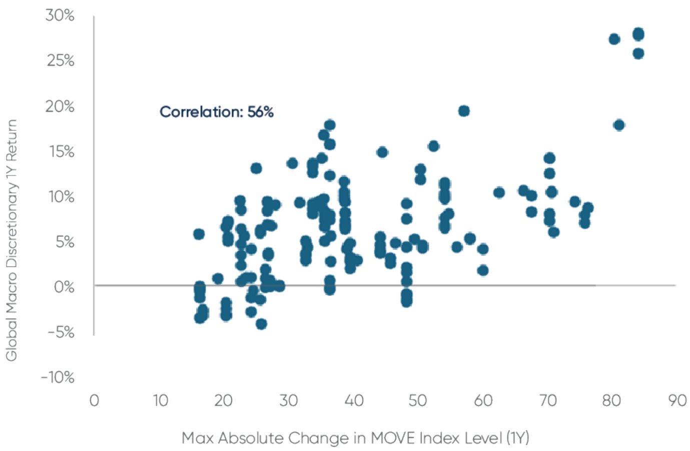
Figure 4

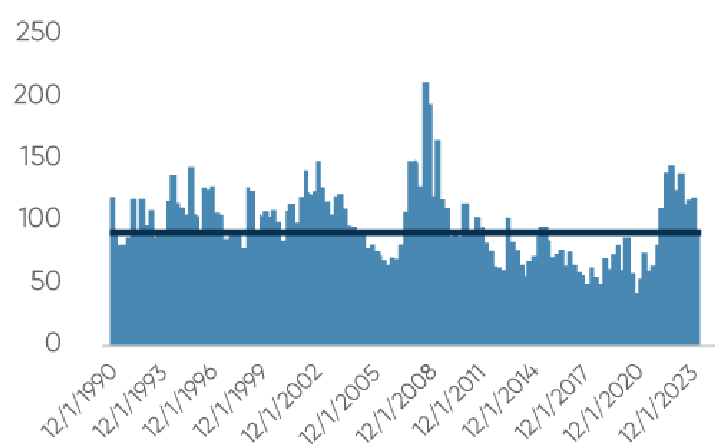
DISCRETIONARY GLOBAL MACRO HEDGE FUND PERFORMANCE VS. INTEREST RATE VOLATILITY



Source: GCM Grosvenor, Bloomberg, PivotalPath. Rolling 1-year returns from January 2009 to March 2024 for the PivotalPath Global Macro - Discretionary index.

Figure 5

HISTORICAL LEVELS OF MOVE INDEX



Source: GCM Grosvenor, Bloomberg.

Tailwind of Higher Interest Rates

We have already shown that hedge funds have historically generated a consistent spread above risk-free yields. While we have shown this empirically, it is also worth highlighting the importance of structural return inherent in levered strategies.

For managers that employ leverage via derivatives, return on cash balances is straightforward. These managers (particularly global macro and relative value funds) may hold significant yield-generating cash on-hand that benefits directly from higher rates.

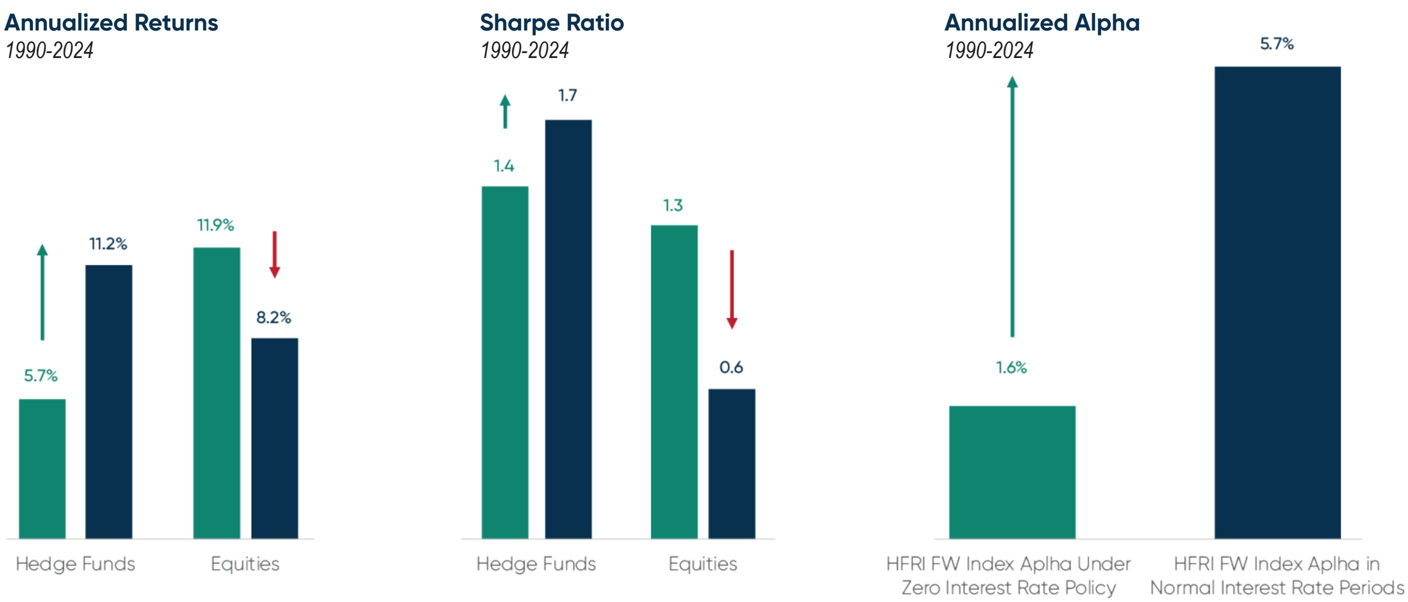
For managers that employ leverage without heavy use of derivatives (e.g. fundamental market neutral equity managers), short rebate plays a key role in keeping pace with rising rates. When a hedge fund partakes in short selling, it provides cash collateral to the lender of the security. The fund, in turn, receives interest generated on their cash collateral.[vii]

Figure 6 shows how hedge fund performance in (near) zero interest rate policy (periods in which effective US federal funds rate were less than 50 basis points) compared versus all other "normal interest rate" periods. As aforementioned fundamentals support, hedge funds delivered materially higher total and risk-adjusted returns under normal interest rate periods. Conversely, global equities (proxied by MSCI World) had the opposite experience – delivering lower total and risk-adjusted returns during the normal interest rate periods.

Figure 6

HEDGE FUND PERFORMANCE BY INTEREST RATE REGIME

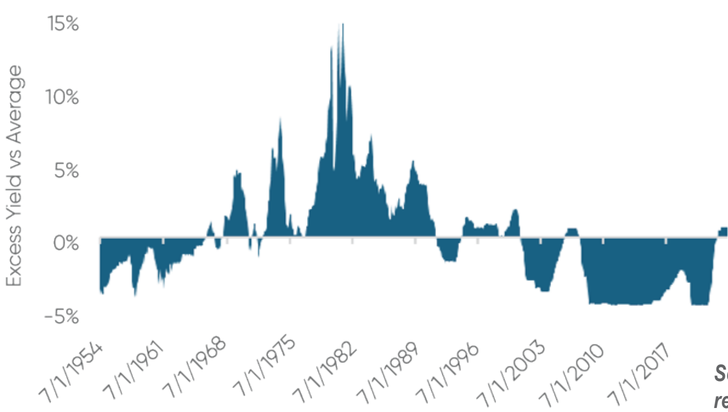
Annualized Returns Under Zero Interest Rate Policy
Annualized Returns Under Normal Interest Rate Policy



Source: GCM Grosvenor, Bloomberg, HFR, MSCI. Zero interest rate policy is defined as a period where the effective federal funds rate is less than 50 basis points, normal interest rate policy is defined as all periods where the effective federal funds rate is greater than 50bps. Hedge Funds represented by the HFRI FW Index, Equities represented by the MSCI World Index

Figure 7

FEDERAL FUNDS RATE VS. 70 YEAR AVERAGE



Source: GCM Grosvenor, Bloomberg, PivotalPath. Federal Funds Rate reflects FEDL01 Index.

And as **Figure 7** reminds us, today's level of interest rates are significantly more "normal" relative to history than were the near-zero rates of the 2010s.

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#3. Reality: Hedge funds have shown the ability to mitigate losses during the most painful periods for traditional assets.

Empirical Support

Figure 8 shows performance for the HFRI Fund-Weighted Composite Index conditional on traditional asset performance since 1990. The summary shows that hedge funds have not only provided strong downside mitigation in periods of pain for traditional assets but have also experienced upside convexity in periods of strength for traditional assets.

Figure 8

HEDGE FUND MARKET CAPTURE

HF Performance in Worst/Best Quarters for Traditional Assets	vs. 60/40	vs. S&P	vs. BB US Agg
Given benchmark <25th percentile			
Bmrk Return	-3%	-6%	-1%
HF Return	-1%	-1%	2%
HF Down Capture	28%	16%	--
Given benchmark >75th percentile			
Bmrk Return	7%	11%	4%
HR Return	5%	5%	2%
HF Up Capture	73%	50%	45%
HF Convexity			
Up Capture: Down Capture	2.6x	3.2x	--

Source: GCM Grosvenor, Bloomberg, S&P, HFR. Returns from January 1990 to March 2024. Reflects performance of HFRI Fund-Weighted Composite versus S&P 500 "S&P", Bloomberg

Key Findings

The HFRI FW Composite captured just 16% of losses in the worst quarters for the S&P 500 since 1990. In this 25th percentile left tail, the S&P lost an average of -6% compared to HFRI FW performance of -1%. On the flip side, the HFRI FW Composite captured 50% of S&P right tail performance – returning +5% in quarters in which the S&P returned +11%. This represents positive convexity with upside capture triple downside capture.

Compared to a 60/40 portfolio of 60% S&P / 40% Bloomberg US Agg, the HFRI FW Composite showed strong convexity – capturing 73% of upside compared with 28% of downside – for a ratio of 2.6x.

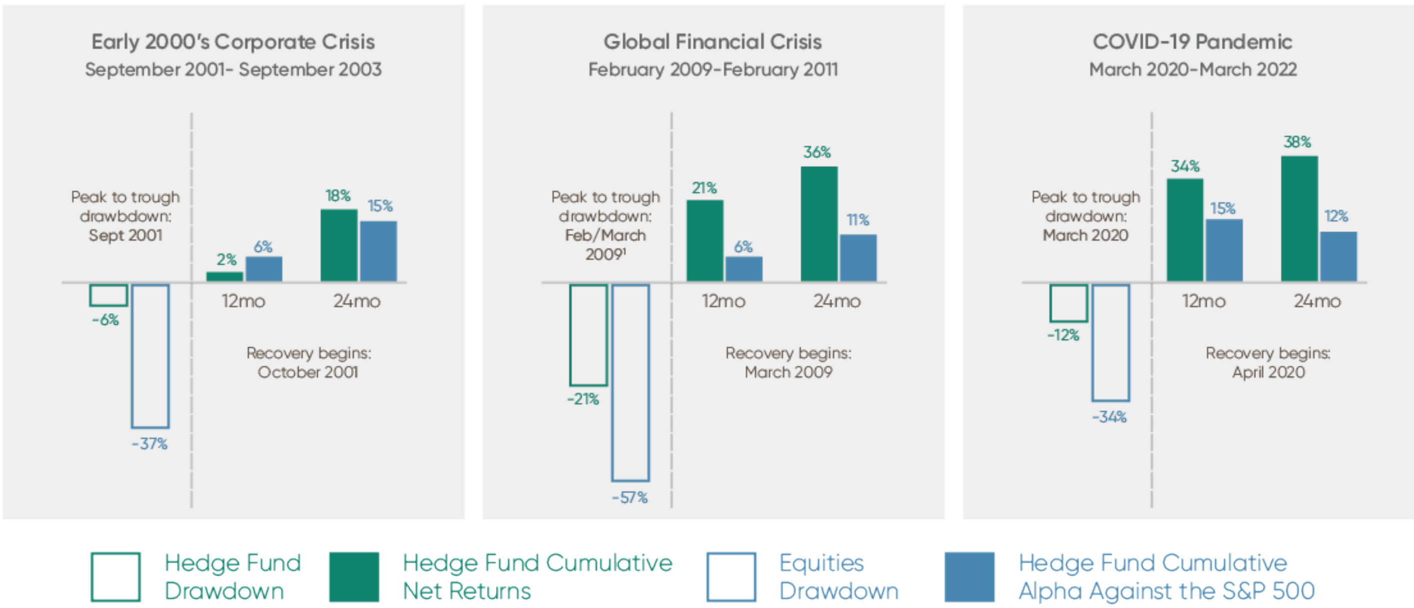
Compared to a 60/40 portfolio of 60% S&P / 40% Bloomberg US Agg, the HFRI FW Composite showed strong convexity – capturing 73% of upside compared with 28% of downside – for a ratio of 2.6x. Results are similar for the period since 2010, shown in Appendix A.

It is important to note that while beta and correlation can be useful point-estimates of portfolio risk and sensitivity, such statistics gloss over the positive convexity that hedge funds have achieved. For example, the full period beta of the HFRI FW Composite vs. S&P is 0.4. This is roughly in-line with the upside capture but implies downside sensitivity twice what was actually experienced.

We also note that there has been strong evidence of downside mitigation during the most recent period. We consider the five worst months for the S&P 500 over the most recent two-year period. In these five months, the S&P had a median loss of -8.3% compared to losses of just -1.4% for the HFRI FW Composite.

Figure 10

DRAWDOWN MITIGATION AND RECOVERY UPSIDE CAPTURE



Source: GCM Grosvenor, Bloomberg. Hedge funds are represented by the HFRI Fund Weighed Composite Index, and equities are represented by the S&P 500 Index.

Qualitative Support

Hedge fund investment styles and risk profiles have evolved over time, with funds quickly incorporating lessons-learned from past periods of pain. Following crises such as the collapses of LTCM and Lehman Brothers, the most levered strategies have adopted more conservative leverage and liquidity limits.

In recent years, risk models – such as MSCI Barra and Axioma factor models – have become highly commoditized and widely adopted. Use of these models and heightened factor awareness has enabled funds to better isolate idiosyncratic risk and return, thus offering better diversification potential versus traditional asset classes.

In the three most extreme equity market drawdowns of this century, hedge funds have not only mitigated losses during the drawdown – but have also capitalized on the ensuing recovery. Moreover, the true downside protection in March 2020 is hard to observe, since markets rallied quickly prior to month-end marks. Anecdotally, we observed better downside mitigation mid-month than was experienced during the worst of the Global Financial Crisis.

Finally, we believe that hedge funds were more incented to take directional market risk during the 2010s than they are today – due to the lack of meaningful short rebates. From 2010 to 2019, a manager who expected to generate 5% alpha would have needed to take substantial equity market exposure to hit a 10% total return target. Today, that same manager would need far less directional risk in seeking to achieve the same 10% total return target. This dynamic reflects a positive incentive in the current market for hedge fund managers to stay tightly hedged and offer continued downside mitigation versus traditional assets.

#4. Myth: It is impossible to predict which hedge funds are most likely to outperform.

It is undoubtedly true that active management is difficult; markets tend to be generally efficient. And it has been well-studied in the active mutual fund space that past outperformance is not often persistent.[ix] The Fidelity Magellan Fund famously beat the market 11 out of 13 years under Peter Lynch – before losing its edge and performing in-line with market averages. While 11 out of 13 years may seem far from random success, if we flipped a coin 13 times the probability of getting 11 heads is 1%. So for every 100 funds, we would expect to find one who beat the market at this rate.

This rightly leads many to apply the same rationale to hedge funds – questioning whether past performance has any predictive persistence – or is just luck.

Barth et al address this very question and find an interesting observation. They find that when analyzing funds that self-report performance to hedge fund databases, there is some limited performance persistence over short time horizons (essentially momentum) and little persistence over longer time horizons. But for funds that do not self-report performance (e.g. presumably funds that are not seeking – nor struggling – to raise assets), the authors find strong empirical evidence of risk-adjusted performance persistence across various time periods.

Drivers of Performance Persistence in Top Hedge Funds

We believe there are key attributes that predictably distinguish elite hedge funds from their active mutual fund and lower-quality hedge fund peers, and that give credence to performance persistence. These attributes include but are not limited to: ability to short; ability to apply leverage; opportunities in complex asset classes/situations; advanced technological infrastructure / trading execution advantages; granular domain expertise.

The attributes above create a wider opportunity set for alpha. Active mutual funds and lower quality hedge funds tend to be longer-biased – and thus statically rely on the direction of markets. The ability to go short and to apply leverage enables more precise isolation of security selection skill and allows managers to explicitly remove lower-quality factor risks from their return profile. Many of the top hedge funds actively trade highly diversified portfolios with low market and factor exposure.

Additionally, the more diversified a portfolio is – the more robust its historical track record is. In other words, it is easier for a highly concentrated portfolio to get lucky and outperform the market than it is for a highly diversified portfolio. Consider this:

> Suppose that a mutual fund owns 50 longs with an average holding period of 6-months, whereas a hedge fund counterpart owns 1,000 longs and 1,000 shorts with an average holding period of 2-months. In one year, the mutual fund has made 100 trades while the hedge fund has made 12,000. Now suppose that neither manager has skill – with both managers having only a 49% chance of a profitable trade. If all trades are equally-sized and returns are symmetrical, both managers should generate negative alpha. Yet, despite its negative skill, the concentrated mutual fund will have a 46% chance of generating positive alpha. In other words, the mutual fund will have a high likelihood of being a phony - appearing to have skill despite having none. The diversified hedge fund, on the other hand, will have only a 1% chance of generating positive alpha – with results far less swayed by luck. The scenario above displays

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> the basic mathematical principle that with more flips of the coin, outcomes will converge on the true success rate (known as the central limit theorem). A process that screens on historical alpha will be more likely to correctly identify (and weed out) the unskilled hedge fund than the unskilled mutual fund. And, conversely, positive alpha by the diversified hedge fund is more likely to be a reflection of real skill. This property makes diversified, hedge fund track records more reliable than concentrated, mutual fund track records.
>
> In short, the more diversified a fund is, the harder it'll be for luck to drive good outcomes.

We should note that levels of portfolio concentration can vary widely across hedge fund strategies – with some taking as few as ten positions and others taking several thousand positions. The implication of this variance is that performance may be more persistent for some strategies than for others. But when considering a diversified hedge fund program (e.g. 20+ managers) we have observed the likelihood of owning 1,000s of underlying positions to be high.

Predictive Factors in Identifying Top Funds

In addition to past performance being predictive in select cases, there are quantitative and qualitative factors that are relevant to assessing future performance. Analytical tools used to predict future performance often involve detailed performance attribution computed by combining historical exposures with realized returns. Via such analysis, skilled investors can ascertain the degree of attributable performance to beta, factor timing, security selection, and other dimensions. By measuring these drivers of risk and return, investors can prioritize the likelihood of future persistence (e.g. favoring security selection over beta or factor timing).

It is critical to note here, that we do not believe there is a single one-size-fits-all approach to decomposing and predicting returns. For one thing, managers often provide different types and/or formats of underlying data – so superior analysis requires extracting the most of whatever information is provided. Additionally, context and narrative are key. For example, if a manager's value proposition as a global macro fund is to time equity markets – then attribution from equity beta will be viewed differently than if the manager purported to be a market neutral fund focused on security selection.

Predictive qualitative factors that may cause concern include, but are not limited to: robust asset growth (in the context of total strategy capacity/scalability and whether growth is organic from profits/losses versus inflows/outflows); strategy or sector drift; mis-alignment of incentives; personnel turnover; changes in risk levels. In many cases, new launches will not have a historical track record and thus allocation decisions will rely entirely on a qualitative assessment. In these cases, it is important to consider that a skilled stock picker who is spinning out of a multi-manager platform will now need to run an entire business, and to evaluate whether their skills and/or the people they have put in place can manage a business (a different skill than being a good stock picker).

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#5. Reality: For multi-asset allocators, an allocation to hedge funds is an important component of portfolios and moves them further along the efficient frontier.

Hedge Funds Have Consistently Outperformed Fixed Income

When assessing the role of hedge funds in multi-asset class portfolios, it is most natural to begin by comparing hedge funds on a standalone basis to fixed income. Fixed income typically makes up a large portion of portfolios and, like hedge funds, stands to benefit from higher risk-free yields. Additionally, fixed income has similar risk attributes to hedge funds (e.g. mid-single digit volatility, low beta to equities).[4]

HFRI FW Composite has generally outperformed the Fixed Income benchmark of Bloomberg US Aggregate. On average, the hedge fund benchmark has generated +300 basis points of annualized excess performance over the fixed income benchmark as shown in **Figure 10a** and **Figure 10b**.

Figure 10a

GROWTH OF $100 IN HEDGE FUNDS VS. FIXED INCOME

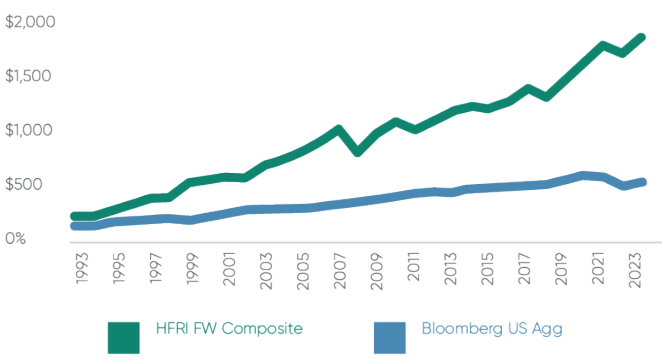
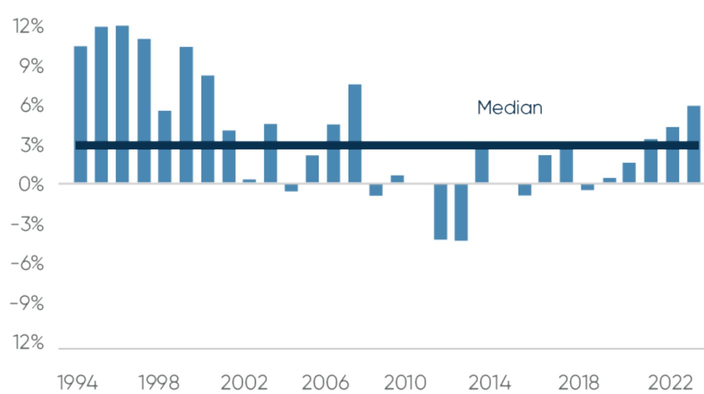


Figure 10b

HEDGE FUND ANNUALIZED EXCESS RETURN OVER FIXED INCOME – ROLLING 5-YEAR PERIODS



Source: GCM Grosvenor, Bloomberg, HFR. Returns as of December 2023. Reflects performance of HFRI Fund-Weighted Composite and Bloomberg US Aggregate Index "BB US Agg".

4 Other material differences exist between hedge funds and fixed income including: investment objectives, namely hedge funds tend to target higher returns; costs and expenses are typically higher for hedge funds; hedge funds tend to be less liquid than fixed income; hedge funds often apply leverage while the fixed income index is unlevered; while interest rates and market conditions can cause fluctuation in bond prices, the principal is generally less volatile than hedge fund investments; tax treatment of hedge funds is complex and varies by investor but is often disadvantageous relative to fixed income.

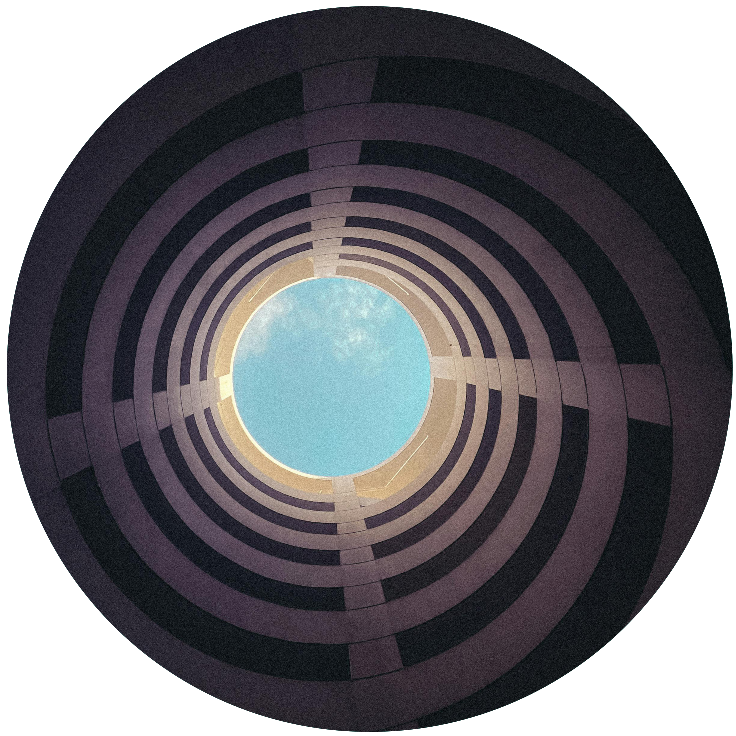
Figure 11 highlights the robustness of hedge funds' outperformance of fixed income across trailing periods. Hedge funds consistently outperformed fixed income across 5-, 10-, 20-, and 30-year periods by +2.2% to +6.5% per annum. Over shorter time horizons – like calendar year 2008 – fixed income significantly outperformed hedge funds. However, over medium and longer horizons, hedge funds outperformed and generated better risk-adjusted performance (as evidenced by higher Sharpe Ratios). Hedge funds did have modestly higher beta to equities than did fixed income – although that differential has compressed in the more recent 5-year period. Moreover, while the hedge fund benchmark has higher standalone volatility than the Fixed Income benchmark, the two have low correlation to one another. As such, adding hedge funds to a fixed income portfolio could be risk-reducing (due to diversification benefits that come from their low pairwise correlation).

Figure 11

HEDGE FUNDS VS. FIXED INCOME

	HFRI FW	Fixed Income
Annualized Return		
30Y	7.5%	4.5%
20Y	5.2%	3.0%
10Y	4.9%	1.5%
5Y	6.9%	0.4%
Annualized Volatility		
30Y	6.7%	4.1%
20Y	6.3%	4.1%
10Y	6.2%	4.8%
5Y	7.6%	6.1%
Sharpe Ratio		
30Y	0.8	0.5
20Y	0.6	0.4
10Y	0.6	0.0
5Y	0.6	-0.3
Beta vs. S&P 500		
30Y	0.3	0.0
20Y	0.3	0.1
10Y	0.3	0.1
5Y	0.3	0.2

Source: GCM Grosvenor, Bloomberg, and HFR. Returns as of March 2024. Reflects performance of HFRI Fund-Weighted Composite ("HFRI FW" or "HF"), Bloomberg US Aggregate Index ("Fixed Income" or "FI")



Traditional 60/40 Equity/Fixed Income Portfolios have been challenged of late

Figure 12 shows a significant challenge to the traditional 60/40 portfolio. The correlation between equities and fixed income has spiked dramatically in recent years. For the past three decades, correlation has been low – oscillating around +/- 25%. But since Covid-19 and the stimulus that followed, correlation has spiked to over 60%, dramatically reducing the diversification benefit.

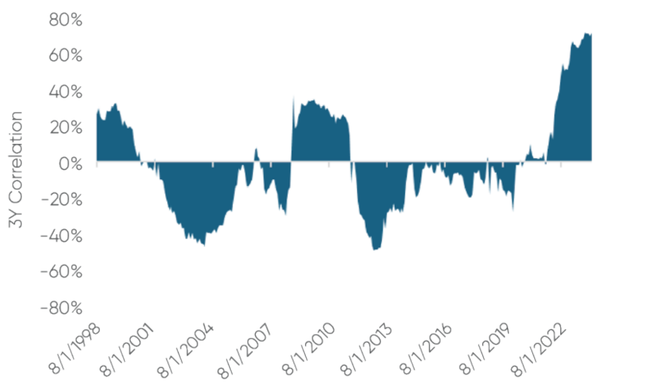
It is not knowable whether this relationship will persist or not. But we choose to place more conviction in tightly hedged long/short strategies maintaining their well-formulated, low correlation to markets than we place on cross-asset correlations quickly reverting to long-run averages. In short, so long as this relationship persists, the 60/40 portfolio is inherently riskier.

Additionally, **Figure 13** reminds us how atypical equity performance since the Global Financial Crisis has been. Since 2010, the S&P 500, including dividends, has generated a Sharpe Ratio of 0.9 – more than double its long-run average of 0.4 since index inception. Moreover, the trailing 5-year Sharpe Ratio for the S&P 500 has not dipped below its long-run average since 2012 – an elevated stretch of 10 years.

This observation is not intended as prediction of an equity market decline – but it is a reminder that the recent risk/return tradeoff of the S&P 500 has been exceptional by history's standards.

Figure 12

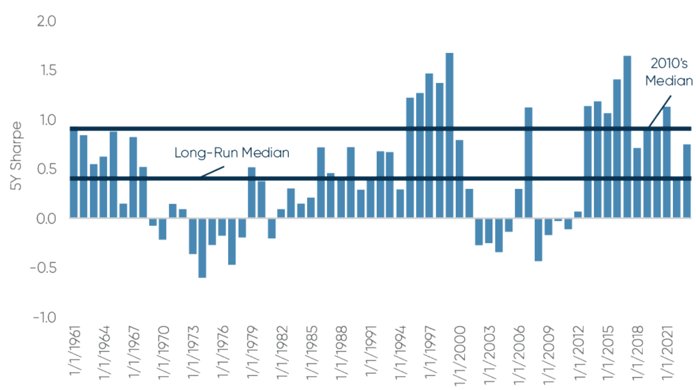
CORRELATION BETWEEN EQUITY AND FIXED INCOME



Source: GCM Grosvenor, Bloomberg, S&P. Bloomberg US Aggregate Index ("Fixed Income") and S&P 500 ("Equity"). Underlying returns from August 1998 to August 2022.

Figure 13

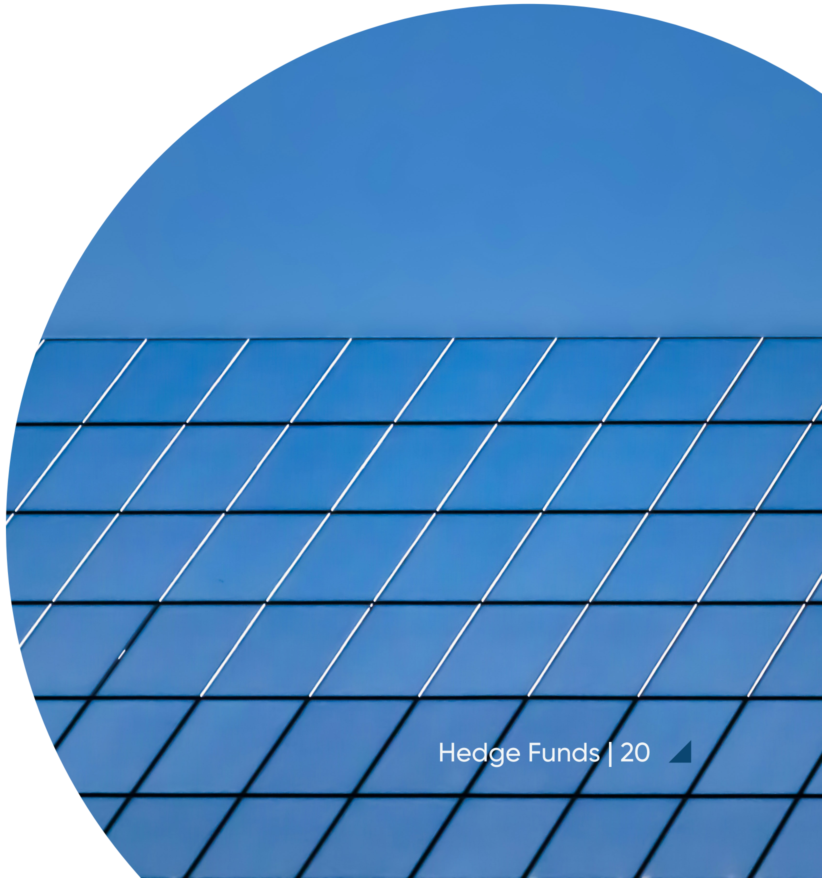
S&P 500 SHARPE RATIO – ROLLING 5-YEAR PERIODS



Source: GCM Grosvenor, S&P. Underlying returns from January 1957 to March 2024. Reflects total return of S&P 500, including reinvestment of dividends.

Drawbacks to Hedge Funds

Hedge fund investing is not without its drawbacks – not least of which are complexity and less liquidity relative to liquid fixed income and equities. For those concerned with operational complexity – a good partner can materially reduce that burden. As for liquidity – there are hedge fund strategies that span the full liquidity spectrum. For example, we believe that it is possible to build an attractive portfolio of hedge funds that can have 80% or more of capital available within one year (under normal market circumstances). There are less-liquid hedge fund strategies that might offer attractive return premia, but these are non-essential for a hedge fund program seeking maximum liquidity.



#6. Myth: Sufficient diversification can be achieved for a hedge fund program with only a few core managers / strategies; adding additional managers / strategies leads to over-diversification.

Manager Diversification

One of the most challenging decisions facing allocators is where to draw the line between diversification and di-"worse"-ification. Investors often wonder what the ideal number of manager allocations is for a hedge fund portfolio.

To some degree the answer is not so straightforward if we consider the differences in underlying manager profiles. For example, a long-biased equity manager may manage a portfolio of 20 long-term investments made by 3 key investment professionals – while a multi-strategy manager may run a highly diversified portfolio comprised of 100 underlying PMs with hundreds of supporting investment professionals. In this case, does it really make sense to consider each as "one fund" for total portfolio fund count? Probably not.

With that said, there are clear benefits to diversifying across multiple managers / rducing single firm risk – all else being equal.

Typically, we find that somewhere between 15 to 25 fund investments strikes the right balance between maximizing diversification benefits – without diluting alpha. Some investors might point to the higher upside of concentrating in a few core managers. However, higher upside as a mere result a of higher volatility – is not desirable for rationale investors.

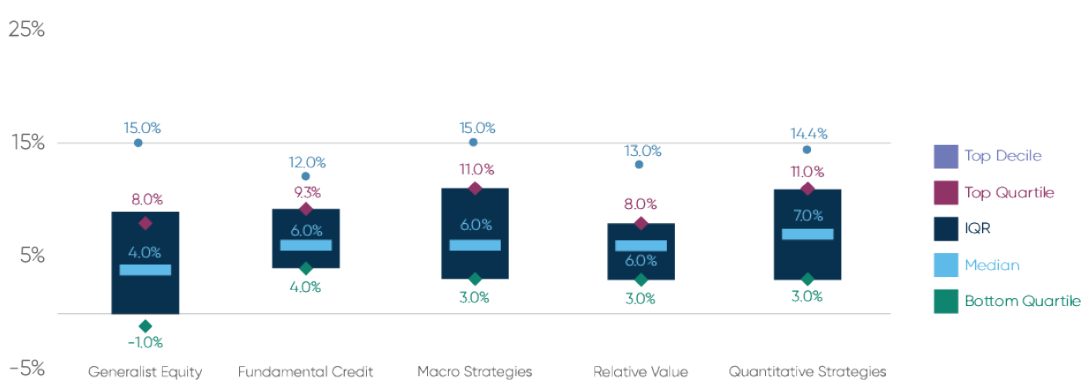
Figure 14 serves as an important reminder of the dispersion between top and bottom performing funds across core hedge fund strategies. This highlights both the importance of investing in top quartile managers as well as the potential cost of concentrating (under-diversifying) into a bottom quartile manager. As the chart suggests, investors that invest in only a handful of funds should expect to have a wide range of potential outcomes.

In our experience, manager selection is the most critical component of a hedge fund program and relies on sourcing a robust universe of high-quality options, being highly selective in choosing those expected to be future top-quartile performers, and not overly concentrated in any single manager.

Figure 14

DISPERSION BETWEEN TOP & BOTTOM PERFORMING FUNDS

Trailing 3-year performance of GCM Grosvenor defined strategy peer groups (January 2021-December 2023)



Data source: GCM Grosvenor. Strategy peer groups consist of all funds tracked by GCM Grosvenor with available returns for the period 12/31/2020 - 12/31/2023; strategy classification is determined on a discretionary basis by GCM Grosvenor's Absolute Return Strategies Research Department. Additional information is available upon request. Updated annually. Unless apparent from context, all statements herein represent GCM Grosvenor's opinion

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Strategy Diversification

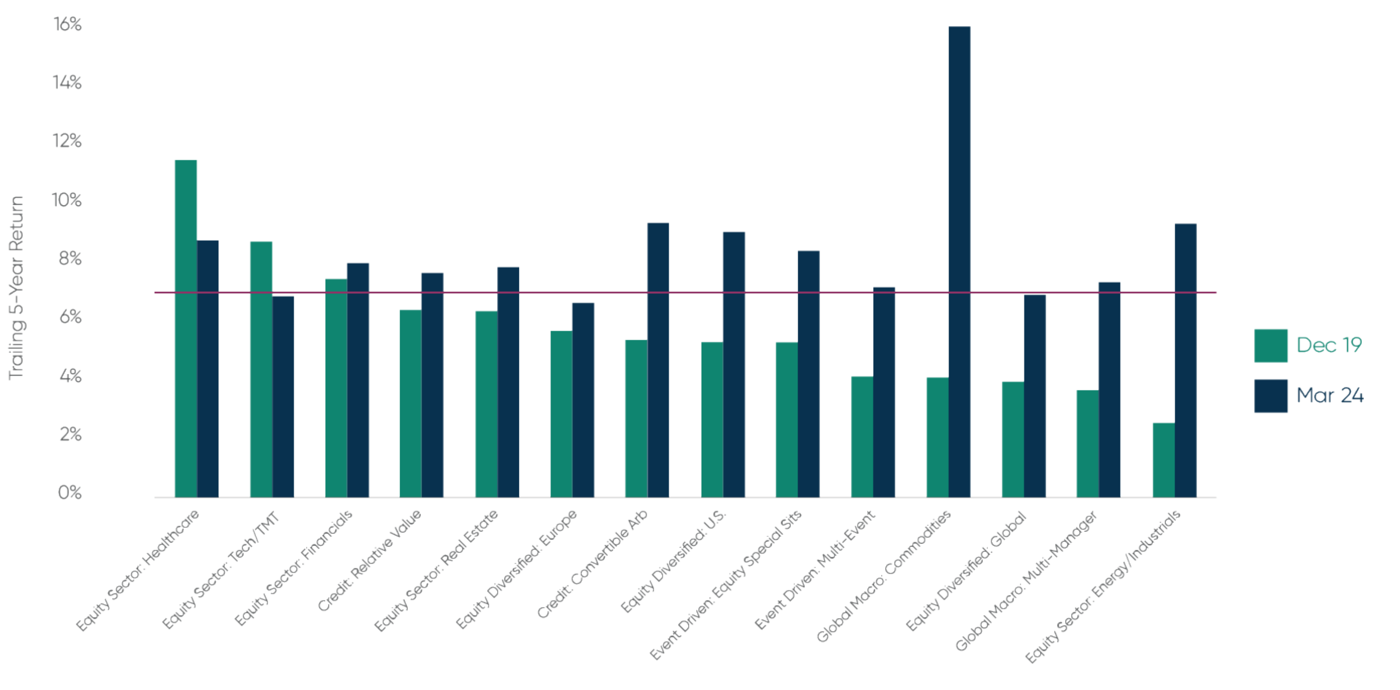
The benefits of strategy diversification are highly intuitive. As we find attractive managers in different styles and asset classes, their individual alphas are additive. But each strategy has distinct undesirable left-tail outcomes that can be somewhat diversified away as we add additional strategies. While we can find managers in the same strategy that are uncorrelated to one another and diversifying – there is simply a higher degree of conviction when the underlying asset composition / opportunity set are non-overlapping. In other words, we believe a multi-strategy approach gives greater breadth by expanding the total opportunity set.

In recent years, hedge funds across a wide array of strategies and sub-strategies have generated attractive returns. This robust opportunity set has enabled multi-strategy hedge fund programs to meet target returns without relying on high sub-strategy concentrations or increased market betas to do so.

Figure 15 shows trailing 5-year performance for the top performing sub-strategy indices produced by PivotalPath as of December 2019 and March 2024. We considered PivotalPath's 24 individual strategy indices and show, in the chart, the 14 that returned at least 7% in either period. As of March 2024, 11 of the 24 indices had generated a trailing 5-year return of at least 7% whereas only 3 of the indices (Equity Sector: Healthcare, Equity Sector: TMT, and Equity Sector: Financials) had done the same for the period as of December 2019.

The implications of this should be clear. An investor aiming for a 7% return would have needed to rely heavily on equity sector specialists during the period as of December 2019, with limited multi-strategy diversification benefits to be had. The opportunity set for the same investor would have become materially more robust during the more recent period, in which additional sub-strategies within Credit, Event Driven, and Global Macro achieved higher returns.

Figure 15 **INCREASED POOL OF HEDGE FUND STRATEGIES HAVE ANNUALIZED AT 7%+ RETURNS**



Data source: GCM Grosvenor, PivotalPath. Trailing 5-year performance as of stated dates. We evaluated PivotalPath's 24 individual strategy indices and show in the chart the 14 that returned at least 7% in either period. Strategies not shown are: Equity Sector: Consumer / Retail, Global Macro: Risk Premia, Global Macro: Quantitative, Credit: Long/Short, Event Driven: Merger Arbitrage, Credit: Structured & MBS, Credit: Multi-Strategy, Equity Diversified: Asia Long/Short, Credit: Distressed, Global Macro: Discretionary Global Macro: Discretionary. Strategies not shown had an average 5-year return of +3.5% and +4.8% as of December 2019 and March 2024, respectively. Strategies shown had an average 5-year return of +5.7% and +8.5% as of December 2019 and March 2024, respectively.

#7. Myth: All the best hedge funds are difficult to access, unwilling to take new capital, and unfriendly to LPs (e.g. high fees, low transparency, poor liquidity terms).

Accessibility

When considering the accessibility of funds with outsized investor demand, it can be helpful to consider the different ways in which capacity can be made available. Our own hedge fund investments represent diversity across life-cycle characteristics: we have core allocations that have launched within the past few years and others than launched before 2000; GCM's initial investment varies by manager (e.g. managers in which we were "day one" investors and others in which we obtained capacity further into the manager's life); in many cases GCM's initial investment was made when a manager had substantially fewer assets under management than it does today (in other words, the relationship was formed while the manager was still growing assets).

While many of today's most sought-after managers launched prior to the turn of the century, there have also been many successful new launches in recent years. It is not the case that investors had one opportunity (e.g. in the 1990s) to access today's winners; rather there have been high quality launches (and periodic 'openings' by older managers) throughout time. With that said, it can be easy to forget that a $1bn investment in a $50bn fund may have started 40 years ago as a $10mm investment in a $100mm fund.

High quality alternative asset management firms specializing in hedge funds offer a great way for new investors to gain immediate access to otherwise inaccessible managers – by benefiting from the firm's long-term partnership with a manager.

Investor Friendliness

Hedge funds that have shown strong evidence of historical alpha production are in high demand (as the industry is fairly efficient). As such, it is only natural that these funds have more negotiating power when negotiating terms with LPs. However, we find sufficient examples of hedge funds in this position that remain strong and aligned partners.

Most investment managers naturally wish for their investors to be ***long-term*** investors – which can be achieved in one of two ways:

1. The LP and GP develop a partnership aimed to be mutual-beneficial. This typically involves the LP showing evidence that they: i) are long-term partners; ii) understand the strategy to a degree that they will not balk the moment there is a blip in performance; iii) ask questions / make recommendations in diligence that strengthen the GP (particularly relevant for emerging managers); iv) have real scale, ideally with stability and diversification in their underlying asset base; and v) are able to execute transactions efficiently.

- or -

2. The GP enforces stability of assets by stretching liquidity terms as far as investors will be willing to accept (sometimes independent of underlying asset liquidity).[xi]

The same dynamic applies to fees, where an over-subscribed GP can increase fees such that the 'highest bidder' gets the marginal dollar of capacity.

In practice, however, there is often a middle ground between these two sides (trust-based partnership vs. terms-based). And in our experience it is certainly not the case that scarce capacity simply goes to the investor willing to pay the highest fees. We have found that it pays to be a good long-term partner.

Transparency

While it is true that managers in high demand tend to be less willing to provide high transparency to specific underlying positions, the degree of transparency varies on a case-by-case basis. For example, most funds offer transparency via third party aggregators and may supplement with position-level details over monthly calls.

Fees

When assessing the appropriateness of fees, we believe after considering overall net returns and quality thereof, that it is best to focus on the LP's share of gross profits. We find that many of our highest fee managers still manage to leave LPs with an attractive split. For example, among fifteen of the largest Multi-Strategy & Multi-PM managers in our database, the typical LP took home approximately 50% of profits in calendar years 2021 through 2023 – with the other half going to the GP. There was, however, wide dispersion, with the LP share ranging from approximately 30% to 75%.

We believe that rational investors are best served to focus on the net performance they receive from a fund and the quality of that return (i.e. alpha or beta), with a willingness to pay higher fees for high quality net returns. Furthermore, we have found that mandates *overly* focused on minimizing fees tend to suffer from adverse selection, which ultimately harms the net performance of the portfolio.

#8. Reality: Positive security selection has driven recent hedge fund alpha – with less importance on equity beta and other common factors.

In recent years, hedge fund skeptics have pointed to the overlap between top hedge fund names and mega-cap tech names – with an implication that recent hedge fund alpha has mostly come from the "Magnificent Seven" stocks that have driven the Nasdaq and S&P higher. (It bears noting that even if this was a purely thematic expression by hedge funds it would still represent a highly profitable trade that was supported by earnings quality).

However, we have seen more robustness to the alpha opportunity set than these headlines indicate. And we've seen many of our most factor-neutral managers perform well – giving further credence to the fact that returns have been driven by idiosyncratic drivers, not common factors.

The period of Q1 2022 to Q1 2024 represents an observation period in which we might have expected hedge funds to perform well. The period included notable market events (significant Fed rate hikes, release of ChatGPT). The rate hikes, in particular, had broad-sweeping effects on fundamental analysis as costs of capital increased – with markets quickly rewarding companies with cleaner balance sheets. This type of analysis is precisely what fundamental hedge fund managers seek to identify – but when costs of capital are cheap, it is easier for lower quality companies to skate by with cheap leverage. Or as Warren Buffet put it, "Only when the tide goes out do you learn who has been swimming naked".

One recent pair-trade opportunity was Uber vs. Lyft, representing a pair of household names that are obvious competitors. Prior to the start of the Fed hiking cycle, the two stocks were 77% correlated to one another. Over the following two years, however, that correlation dipped to 64% – with Uber outperforming Lyft by an annualized spread of +76%.

It is easy to find similar examples such as: NVIDIA vs. Texas Instruments, Booking Holdings vs. Sabre, Builders FirstSource vs. JELD-WEN Holding, Fiserv vs. Fidelity National Information, and Mastercard vs. Global Payments.

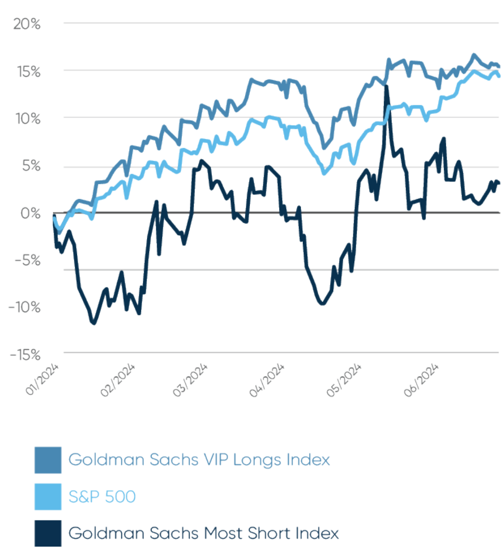
Figure 16 highlights attributes of the most recent environment for stock pickers. Since the start of 2024, the Goldman Sachs VIP Longs Index (of most popular hedge fund long names) kept pace with the S&P 500 while the Goldman Sachs Most Short Index (of most popular hedge fund short names) significantly lagged. This outperformance of longs versus shorts drove a 12.3% long/short spread from January through June of 2024.

Moreover, despite the S&P's year-to-date rise, a significant portion of stocks in the S&P and Russell 2000 were down on the year through June month-end. So while hedge fund ownership of mega cap tech names may have appeared to be index-hugging versus the S&P, these overlapping names were crucial to own and proved valuable counterparts to the most shorted laggards.

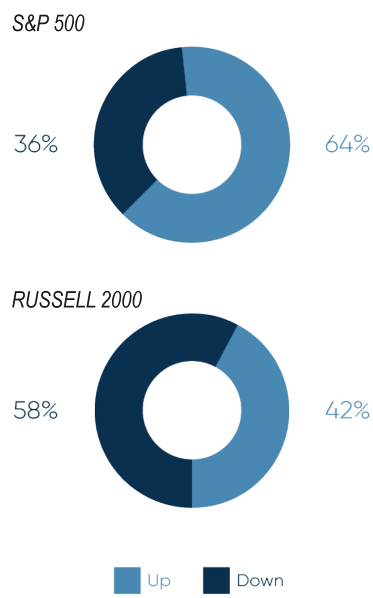
Figure 16

ATTRACTIVE STOCK PICKING ENVIRONMENT FOR HEDGE FUNDS

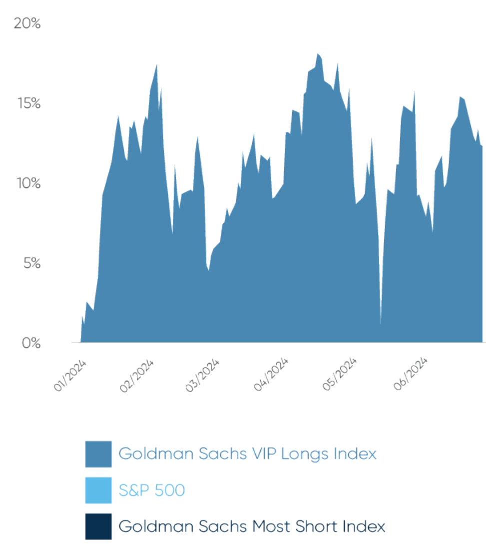
The S&P Has Been Driven by a Select Few Quality Stocks



A Significant Portion of the Market is Down YTD



Elevated Dispersion Benefits L/S Spread for Stock Pickers



Data Source: GCM Grosvenor, Goldman Sachs, Bloomberg, S&P, Russell. Data as of June 30, 2024.

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#9. Myth: The hedge fund industry is shrinking, and allocators are reducing allocations to hedge funds.

The hedge fund industry, in fact, continues to grow in terms of total assets and total employees. HFR reports that the industry has added $1tn in assets since 2019, bringing total assets to $4.3tn. As **Figure 17** shows, assets have grown steadily in all but three years since 1990. (The study by Barth et al estimates that HFR underestimates total assets by approximately $2tn.)

One reason for the misconception that the industry is shrinking is that the industry is becoming more concentrated in the largest funds. For example, in Q1 2024, 84% of net asset flows went to funds with assets under management greater than $5bn – indicating that the largest funds continue getting larger.

While the largest funds continue to grow, **Figure 18** shows that there are still a healthy number of new launches and high-profile spinouts. While the number of launches has declined over time, so has the number of liquidations – consistent with a maturing and stabilizving industry.

Moreover, the number of new launches can be somewhat misleading as many of the largest multi-manager platforms continue adding portfolio managers and teams. To some degree, there is little difference between a new pod being created as part of a large multi-manager platform and a standalone new hedge fund launch.

We can observe this growth within multi-manager funds based on employment data. According to Hedge Fund Alert, "for the third straight year, the 75 hedge fund firms with the most employees have seen a double digit increase in overall staffing". From 2023 to 2024, headcount for the 75 largest hedge fund managers increased by more than 3,000 to just under 34,000 total employees.

Overall, we believe the continued growth and consolidation into top players represents a healthy stabilization of an industry entering its fourth decade of broad institutional adoption.

Figure 17

HEDGE FUND ASSET GROWTH ($BN)

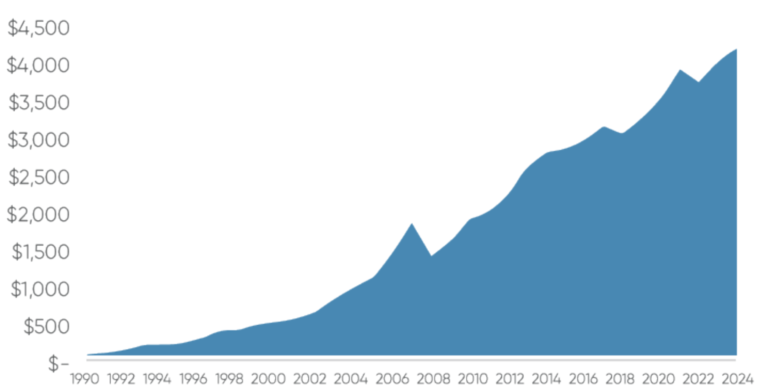
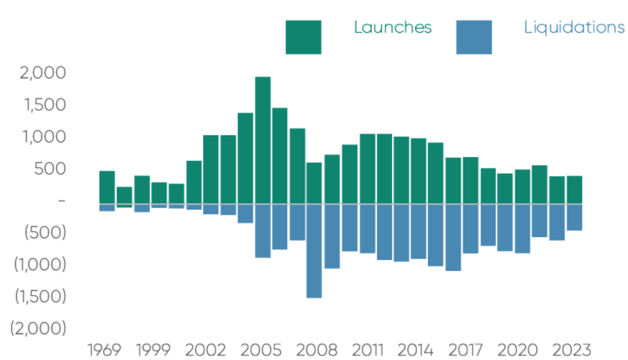


Figure 18

HEDGE FUND LAUNCHES VS. LIQUIDATIONS



Source: GCM Grosvenor, HFR Industry Report Q1 2024.

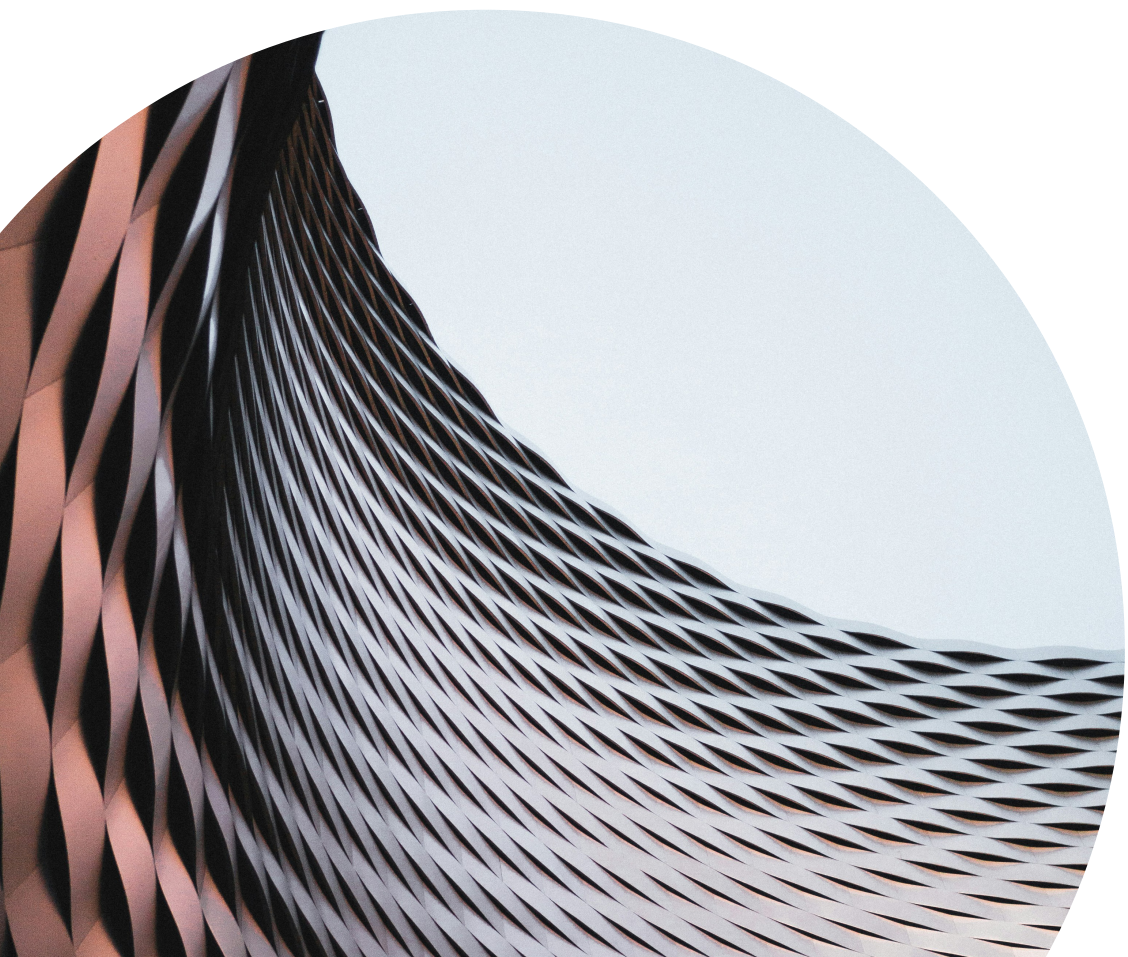
#10. Reality: Now is a particularly opportune time to invest in hedge funds, given strategy tailwinds, increased riskiness of long-only strategies, and declining capacity among certain elite global firms.

As described in the aforementioned points, there are many reasons why the present is a particularly good time to be investing in hedge funds. To summarize in three key points:

1. Key macroeconomic forces have flipped from acting as headwinds to tailwinds for hedge fund alpha in recent years. Higher global interest rates, higher asset dispersion, and lower levels of intra-asset class correlations all create a more robust opportunity set for security selection and ultimately alpha.

2. There are significant headwinds for long-only, risk assets that include: extended asset prices and multiples; tight credit spreads; heightened geopolitical risks; and increased correlation between stocks and bonds. The headwinds make hedge funds more attractive on a relative basis.

3. Future capacity with the most elite funds will continue to wane as strong performance continues. If investors wait to see additional performance over the next year or two, it will likely be too late to obtain access to some of the highest quality funds. We have seen many elite funds react to the growing opportunity set for alpha by taking in slightly more capital in recent years, but we do not expect that pace to continue and expect supply-demand to adjust.



Appendix A

HEDGE FUND UP / DOWN MARKET CAPTURE SINCE 2010

HF Performance in Worst/Best Quarters for Traditional Assets	vs. 60/40	vs. S&P	vs. BB US Agg
Given benchmark <25th percentile			
Bmrk Return	-3%	-5%	-2%
HF Return	-1%	-1%	1%
HF Down Capture	29%	21%	--
Given benchmark >75th percentile			
Bmrk Return	7%	11%	3%
HR Return	4%	4%	1%
HF Up Capture	67%	40%	40%
HF Convexity			
Up Capture: Down Capture	2.3x	1.9x	--

Source: GCM Grosvenor, Bloomberg, S&P, HFR. Returns as of March 2024. Reflects performance of HFRI Fund-Weighted Composite versus S&P 500 "S&P", Bloomberg US Aggregate Index "BB US Agg", and 60% S&P / 40% BB US Agg "60/40". Past performance is not necessarily indicative of future results.

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Endnotes and Data Sources[xviii]

[i]In reality, hedge funds compete against market participants beyond just other hedge funds (e.g. retail investors, active mutual funds, hedgers). As such, it is possible (and we believe likely) that hedge funds can be net-winners in a zero-sum market with other participant types the net-losers.

[ii]These are detailed in Agarwal, Fos, Jiang, Inferring Reporting-Related Biases in Hedge Fund Databases from Hedge Fund Equity Holdings. 2013. (among others)

[iii]Barth, Joenvaara, Kauppila, Werners, A Bias-Free Assessment of the Hedge Fund Industry: A New Evaluation of Total Assets, Alphas, and the Flow-Performance Relation. 2023.

[iv]Mouboussin, Callahan. Dispersion and Alpha Conversion: How Dispersion Creates the Opportunity to Express Skill. Morgan Stanley. 2020.

[v]We then calculate rolling 1-year performance of PivotalPath's Global Macro – Discretionary index. For the same rolling 1-year periods, we calculate the maximum and minimum month-end MOVE Index levels and take the difference as the Max Absolute Change in MOVE Index Level. Finally, we calculate correlations between the Global Macro fund returns and MOVE Index Level changes.

[vi]One offsetting factor to short rebate is that the short seller must pay the lender any dividends received during the period. So long as dividend yields on the long and short side are of a similar magnitude, any changes to dividend yields will offset for market neutral manager. For a long-biased manager, there will be benefit from increased dividend yields.

[vii]Not all shorts are available at GC rate – but instead are known as "hard to borrow". A large percentage of shorts being hard to borrow will reduce overall short rebate.

[viii]Period spans from April 2022 to March 2024.

[ix]Carhart. On Persistence in Mutual Fund Performance. The Journal of Finance. 1997.

[x]Probabilities are calculated assuming the binomial theorem – commonly used to solve problems such as the likelihood of getting n heads from k flips of a fair coin.

[xi]It is worth noting that funds that employ high degrees of leverage may necessitate worse liquidity than their underlying asset liquidity may imply. This is ultimately a function of what their counterparties need to see in terms of asset stability.

[xii]The number of managers considered and duration of analysis are a function of data availability – as analysis relies on review of manager financial statements.

[xiii]HFR Global Hedge Fund Industry Report. First Quarter 2024. Source: HFR Industry Reports © HFR, Inc. 2024, www.HFR.com.

[xiv]**Data Sources:**
Bloomberg Finance L.P.

Credit Suisse.

Preqin.

Eurekahedge.

HFR, Inc. www.HFR.com.

PivotalPath.

S&P. S&P and its third-party information providers do not accept liability for the information and the context from which it is drawn.

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Our Locations

Headquarters
Chicago
+1-312-506-6500

900 North Michigan Avenue, Suite 1100, Chicago, IL 60611

New York
+1-646-362-3700

Toronto
+1-647-417-7361

London
+44-0-20-3727-4450

Frankfurt
+49-69-5899-6526

Tokyo
+81-3-5573-8110

Hong Kong
+852-2452-9400

Seoul
+82-2-2158-8500

Sydney
+61-2-9231-8600