

Alternative Strategies

Is 40/30/30 the new 60/40?

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Sum

Summary.

2022 was a landmark year for monetary policy, with Central banks shifting priority from supporting growth to taming inflation. As a result, markets tanked amid high inter-asset class correlation levels, potentially questioning the respective attractiveness of equities vs bonds. Besides, alternative strategies tend to structurally benefit from a high rate context. **Is it time to revisit the traditional 60/40 portfolio?**

In this paper, we run a series of mean-variance optimizations on various timeframes and implementing different sets of constraints. We show that **introducing alternative strategies** (CTAs, Event-driven, Equity market neutral, Funds of hedge funds) **tends to enhance the return/risk profile of a 60/40 equity/ bond portfolio.**

What mix of alternative strategies should investors favor in the current environment? Our previous research has shown that CTA strategies behave differently in the various phases of the economic cycle. We explore two potential economic scenari (Expansion phase, and Peak and Recession phase) and find the combinations of alternative strategies offering the most attractive return/ risk profile in each of these phases.

On this basis, we show that **introducing 30% of alternative strategies**, with a mix that varies depending on the economic regime, **tends to improve the return/ risk profile of the 60/40 portfolio on both return and risk metrics.** We believe this can be an attractive option for investors navigating the current environment.



Introduction.

Information is not knowledge. The only source of knowledge is experience.

- Albert Einstein

The year 2022 marked the end of an era, putting an end to Central banks' continued support to financial markets since the Great Financial Crisis – at least under that form. While Central banks clearly adjusted their focus to their main target: taming inflation – their main if not sole focus in the case of the European Central Bank –, they led aggressive interest rate hikes to levels unseen in a while. As equity and bond markets suffered severe falls amid correlation levels rarely encountered in the past, many investors started to wonder if this new risk environment had led to the end of the traditional 60/40 portfolio. Fortunately, in 2023 equity markets showed some resilience, as Central banks succeeded in cooling inflation and ensuring a soft landing of the economy.

A lasting high rates environment usually raises a classical conundrum for asset allocators: how attractive are equities vs bonds, in other terms how well is the equity risk remunerated? In contrast, alternative strategies tend to structurally benefit from this context as they target positive performance above short-term interest rates (ESTER, SOFR...). Indeed, most of them are market neutral or directional leveraged ones with low margin to equity, and are mainly invested in money markets. In any case, we have to recognize that the "Whatever it takes" paradigm of the Draghi era is over. This realization is not easy, as it takes time and will power to detoxify from over ten years of unconditional support and abundant liquidity – just like it takes strength to leave a comfort zone for the great unknown. Financial markets have stepped into a new era, on a new learning path, where knowledge will be sourced from experience. If we are ready to question our old beliefs, now may be the time to wonder: **If Times have changed and if the 60/40 is no longer valid, what would be a good alternative?**

In a previous paper by our Asset Allocation team ("Asset Allocation: Finding the Right Balance for your Portfolio"), we pointed out that "maintaining a static domestic equity/ bond allocation over time is sub-optimal. Portfolio construction must take into account the macroeconomic environment, the inflation regimes, the evolution of interest rates and cross-asset correlations". In the same spirit, in our paper "On the economic rationality of CTAs", we have shown that depending on business cycles, CTAs may add value to traditional portfolios at various degrees. In essence, both papers highlight the power of diversification. This led us to study this topic in the universe of alternative strategies.

In this paper, we study that diversifying into alternative strategies can help investors navigate various markets, as it can enhance performance as well as risk metrics. By doing so, we attempt to bring an answer to our question: **Is the 60/40 portfolio dead and buried? We would rather say that we see an appealing alternative: the 40/30/30.**



On Diversification: The Markowitz Point of View.

In choosing a portfolio, investors should seek broad diversification. Further, they should understand that equities – and corporate bonds also – involve risk; that markets inevitably fluctuate; and their portfolio should be such that they are willing to ride out the bad as well as the good times.

– Harry Markowitz

Diversification is a basic while major principle in asset management, and widely seen as a power tool to navigate market fluctuations. It has long been embodied in a basic form, the 60/40 portfolio (60% equities and 40% bonds), whose balanced profile has offered many benefits to investors through the past fifty years or more. But the 60/40 model has also regularly been under criticism. Macroeconomic conditions are not constant but in constant evolution – and the major shift in monetary policy that we have experienced after the latest inflation peak would call for a rethink of allocation models. **Should we rethink the traditional 60/40? How can we try to improve its risk-return profile?** Should we introduce other assets? In which proportion?

Hedge Fund strategies are known to embrace diversification properties, as they tend to display low correlation with equities and bonds. In our previous papers, "<u>On the economic rationality of CTAs</u>" or "<u>CTA's: Ride of the Valkyries</u>", we have shown that adding CTAs to a traditional portfolio enhances performance and mitigates downside risks in all phases of the economic cycle – with their most beneficial impact being during recessions, where their tail risk hedge properties play a key role.

Diversification is your buddy. – Merton Miller

In this paper, we will feature the f**our major styles of hedge fund strategies:** Global Macro, Directional, Event-Driven and Relative Value, respectively represented by the following indices: BARCCTA Index (Global Macro and Directional), HFRIEDI Index (Event-Driven), HFRIEMNI Index (Equity Market Neutral, representing Relative Value strategies). We will add HFRIFOF Index (Funds of Funds) to complement the panel with additional diversified strategies. *See the Appendix for a full disclosure of the indices used.*

As to the portfolio construction approach, we will rely on the **Modern Portfolio Theory**¹ introduced by Markowitz (1927-2023). This approach, which brought Markowitz to Nobel Prize, is based on mean-variance analysis and relies on the Market Efficiency Hypothesis and investors rationality. It assumes that between two portfolios offering the same expected return, investors will prefer the less risky one.

Mathematically speaking, building an optimal portfolio (i.e. a weighted combination of assets with a target expected return) means performing a quadratic optimization that minimizes its variance.

In this paper, we will refer to the 'Reference Portfolio' as being a 60% Equities/40% Bonds portfolio², we will use the alternative segments as previously mentioned (Event-Driven, Equity Market Neutral, alternative Funds of Funds, Global Macro and Directional), and the Markowitz mean-variance portfolio construction model. We show performance as returns adjusted for Fed Fund rates³. Finally we use long-term data, since 1990, unless specified otherwise.

1 - https://en.wikipedia.org/wiki/Modern_portfolio_theory

2 - 60% Equities: MSCI World Net Total Return USD Index, 40% Bonds: Bloomberg Barclays US Agg Total Return Value Unhedged USD. See Appendix for full disclosures of indices used.

3 - Source: Bloomberg, FDTR Index

1. The Relevance of Alternative Strategies.

1.1. An unconstrained optimization suggests the supremacy of alternative strategies

Starting with an agnostic stance, we run the portfolio optimization unconstrained, so as to let the model allocate assets on all available asset classes, and propose portfolios with their expected returns and risk characteristics. This initial optimization yields impressive results:





Whatever the expected return, the optimal allocation is always achieved by investing only in alternative assets, leaving no space for the Reference portfolio.

Equity Market Neutral (HFRIEMNI Index)

Reference Ptf 60/40 Sharpe Ratio

Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns Source: Candriam, simulation, January 2024

CTA (BARCCTA Index)

In other words, a blend of alternative strategies tends to always provide higher expected returns than a 60/40 portfolio. More precisely, the proposed combinations of alternative strategies feature allocations ranging from [0 to 10%], [0 to 80%] and [10% to 100%] of CTAs, Equity Market Neutral and Event-Driven respectively.

If we try to match the annualized return achieved by the Reference portfolio during this period (3.42%), the corresponding optimal portfolio (i.e. the most diversified portfolio) offers a far better Sharpe ratio (1.12 compared to 0.36 for the Reference portfolio). This optimal portfolio is composed of 9.2% CTAs, 23% Event-Driven and 67.8% Equity Market Neutral strategies. Its statistics, shown in the following table, also display a lower volatility and reduced maximum drawdown.



Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns. Source: Candriam, simulation, January 2024

However attractive these results may be, a reality check leads us to consider this 100% alternative portfolio as a *theoretical* optimal portfolio. All alternative strategies are not scalable to the same extent as traditional asset classes such as equities and bonds. Alternative strategies' P&L tends to deteriorate above a given size of assets managed. Thus, let's now try to build a more *realistic* optimal portfolio by constraining the Markowitz model.

1.2. A more diversified (and realistic) allocation

We implement the following constraints on the optimization:

- the Reference portfolio would have a weight between [70%, 90%]

- the alternative strategies would have a total weight up to 30%, with a minimum of 2.5% on each segment to ensure sufficient diversification within the alternative sleeve.



Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns.

Source: Candriam, simulation, January 2024



Statistics	Optimal portfolio 2	Reference portfolio
Annualized return	3.48%	3.42%
Volatility	7.22%	9.52%
Sharpe Ratio	0.48	0.36
Maximum drawdown	29.57%	36.93%



Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns. Source: Candriam, simulation, January 2024

Furthermore, looking more particularly at the composition of the optimal portfolio matching the annualized returns generated by the Reference portfolio, we have: 70% Reference portfolio, 7.5% CTAs, 6.6% Event–Driven, 13.4% Equity Market Neutral and 2.5% Fund of Funds. With such an allocation, we succeed in improving the Sharpe Ratio to 0.48 (from an initial 0.36) and lowering the Max Drawdown to 29.57% (from 36.93%).

We have done the math, and figures shown are just what they are: mathematical conclusions resulting from an optimization. Nevertheless, our readers could be tempted to challenge these results to make them coincide with their knowledge and interpretations of the reality of financial markets in the recent past. Indeed, our perception of markets has been significantly shaken since the Great Financial Crisis and the extraordinary role played by Central banks. Hence, it seems natural to zoom in on markets post–GFC, and observe the July 2009–today period (July 2009 being flagged by the NBER – National Bureau of Economic Research – as the end of recession).

1.3. Post-GFC: 60/40 is King

Let's do the same optimization work, with the same underlying assets, but this time focusing on the period between July 2009 and today.

Unconstrained optimization

The result gives credit to our assumptions: **no allocation beats the traditional 60/40 portfolio in the post-GFC era** – at least given our selection of alternative strategies. The new paradigm created by Central banks after the GFC, and their "Whatever it takes", has worked pretty well until 2022. Investors may remember the pandemic period and the abrupt 30% drawdown on SPX Index – which was recovered in less than 4 months.



Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns. Source: Candriam, simulation, January 2024



Nonetheless, we should not be blinded by returns. **While the 100% Reference Portfolio achieves the highest return, it does not provide the best return/ risk profile.** In this particular period, the portfolio that achieves the highest Sharpe Ratio (0.74) and the lowest drawdown (11.11%) has the following allocation: 26.9% of Reference Portfolio, 9.2% of CTAs, 47.1% of Event-Driven, 16.8% of Equity Market Neutral.



Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns.

Source: Candriam, simulation, January 2024

Let's see what happens now if we implement more diversification and apply constraints on the strategies allocations.

Constrained optimization

In this case, the highest returns are generated by a combination of 90% Reference portfolio and a 10% sleeve of equi-weighted (2.5%) strategies.



We note that the highest Sharpe ratio on this period (0.68) is achieved by a portfolio composed by 70% of Reference portfolio, 5.1% of CTAs, 19.9% of Event-Driven, 2.5% of Equity Market Neutral and 2.5% of Fund of Funds. As we see in the table, this allocation only marginally improves the Sharpe Ratio; the more significant improvement is achieved on the reduction of the maximum drawdown (16.93% instead of 21.73%).

Statistics	Optimal portfolio 4	Reference portfolio
Annualized return	5.32%	6.01%
Volatility	7.86%	9.44%
Sharpe Ratio	0.68	0.64
Maximum drawdown	16.93%	21.73%

Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns.

Source: Candriam, simulation, January 2024



Intermediary remarks

Post-GFC, the traditional 60/40 portfolio has posted stellar performance, a result that cannot be matched when introducing diversifying alternative assets.

Now, let's look at the facts, and at 2022 more particularly. Between the brutal post-Covid high consumption trend, the disruptions on production lines and the energy crisis linked to the invasion of Ukraine, inflation jumped drastically, reaching levels not seen for 40 years. Amid those events, equities and bonds both went down and the 60/40 portfolio posted a negative performance of -17.24% (adjusted by Fed. Fund rates), flagging the end of the "Central Banks Put". This appears as a reminder of the fact that economic policies as well as geopolitics should not be disregarded, and that allocation plans should always integrate an analysis of the general context and upcoming environment. Now that we are in a new paradigm and that the 60/40 is no more the "one and only" solution, what allocation should we favor for 2024?



In 2022, commodity prices hit record levels and production lines were disrupted:

2. Which portfolio for 2024?

Even if fears of a hard landing followed by a recession were legit a year ago, Central banks have succeeded in cooling inflationary pressures without triggering the recession that markets dreaded. As we frequently do in our papers, let's consider the US Economy as a leading indicator of the global one. Referring to the phases of the economic cycle detailed in our paper "On The Economic Rationality of CTAs", we estimate that the global economy is currently in a Growth phase, and we may also argue that it is heading into an Expansion phase.

Figure 5:

2023 and the inflation decline



Source: Candriam, Bloomberg



What now, for 2024? In a pragmatic way, we see two possible paths for the global economy: **either 2024 will a pursuit of the Expansion cycle, or we may enter a Peak phase followed by Recession.** From an investor's perspective, starting from a traditional 60/40 portfolio, we will use the Modern Portfolio Theory to try to identify the best allocation depending on our expectations and the incoming environment

Figure 6:

The four phases of the business cycle



Source: Candriam

2.1. Scenario 1: a prolonged Expansion phase

Using the same methodology as in "On The Economic Rationality of CTAs", we focus our analysis on the months corresponding to Expansion phases between 1990 and now – that is 262 months of excess returns⁴. Based on this dataset, we perform an ex-post study of optimal allocation, constraining weights to [70%, 90%] for the Reference portfolio and allowing up to 30% for alternative strategies, with a floor at 2.5% on each single one.



Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns. Source: Candriam, simulation, January 2024

4 -We use excess returns on Fed fund rates





Furthermore, locating the allocation that matches the expected returns of the 60/40 Portfolio, we find the following composition: 70% of Reference portfolio, 2.5% of CTAs and 2.5% of Funds of Funds, 18.1% of Event-Driven and 6.9% of Equity Market Neutral. This new portfolio improves the Sharpe Ratio by 0.15 and reduces the maximum drawdown from 21.73% to 16.99%.

2.2. Scenario 2: a Peak followed by a Recession

We have just seen that even in an Expansion phase, diversifying a traditional 60/40 portfolio with alternative strategies contributes to improve its return/risk profile, notably its Sharpe Ratio and maximum drawdown. As we observed in our analysis of Peak and Recession environments (as defined in our paper "*On The Economic Rationality of CTAs*"), the optimal allocation based on 75 historical months of Peak and Recession periods shows this time a **significant switch to alternative strategies**, with an overweight in CTAs and, to a lesser extent, in Equity Market Neutral strategies. We can see here another evidence of the now well-known and documented tail-risk hedge properties of CTAs. The maximum performance is generated by the portfolio allocating 22.5% to CTAs and 2.5% to the other alternative stegments.





CTA (BARCCTA Index)
Event-Driven (HFRIEDI Index)

Equity Market Neutral (HFRIEMNI Index)

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Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns. Source: Candriam, simulation, January 2024

Throughout this paper, we showed the benefits for investors of diversifying their traditional equity/bond portfolios by introducing alternative strategies – apart from the exceptional post-GFC period where Central Banks had set up the "Whatever it takes" paradigm. This diversification effect appeared to be positive on the entire period as well as in specific phases of the economic cycle, namely the Expansion and Peak and Recession phases. However, these simulations were done until now with static allocations. It will be interesting to go a step further and test them in more dynamic environments. Especially, it has been shown that allocation into alternative buckets should be different depending on the economic/ business phase. Simply said, **Event-Driven should be preferred during Expansion periods while CTAs and Equity Market Neutral strategies should be favored in Peak and Recession phases.** So we will suggest an allocation process that switches between alternative segments depending on a given environment or economic indicator.

Building

3.Building a resilient alternative sleeves.

3.1. Defining the framework

As mentioned earlier, while an unconstrained implementation of the Markowitz optimization could suggest high allocations to alternative strategies, we have to factor in their potential scalability issues and adjust our framework accordingly. Moreover, when considering a traditional 60/40 portfolio as the main component of our allocation, our analyses revealed that in most cases, only 70% of the portfolio should be invested in the equity/ bond asset classes, and that a 30% bucket of alternative assets should be allocated among available strategies. At this point, this provides us with a general set up that we can refine by focusing on the content of the alternative sleeve. **What would be the most resilient alternative sleeve in function of the economic environment?**

Defining risk-on/ risk-off allocations

Following the Markowitz allocations over different periods – since 1990 or post-GFC –, let's consider a **risk-on alternative bucket** made of 5% of CTAs, 5% Equity Market Neutral, 5% Funds of Funds and 15% of Event-Driven. Inversely, when analyzing Peak and Recession phases (see 2.2), it appears that CTAs and Equity Market Neutral should be overweighted. We therefore suggest a **risk-off allocation** of 12.5% in CTAs, 12.5% in Equity Market Neutral, 2.5% in Event-Driven and 2.5% in Funds of Funds.

Switching phases: defining an indicator

Now the question arises on how to switch from one phase to another... Surely, the most exact process would be to match the economic cycles, however how can we identify them? Statistics tend to lag – from the publication of growth statistics by the IMF or any other official entity, to the identification and official formalism of Recession phases by the NBER. Discussions with our economists suggested **we consider the US unemployment rate as the most real-time indicator of the current business environment**, a sort of *nowcast indicator*.

On this basis, we assume that a **six-month negative momentum on this indicator reveals a healthy environment, therefore advocating for the risk-on alternative sleeve**; inversely, **a 6-month positive momentum would lead to prefer the risk-off allocation.** For a more pragmatic implementation, especially to avoid a high turnover and abrupt and short-term switches between phases, we define a **transitory state** and assign this state an allocation of 10% Event-Driven strategies, 7.5% CTAs, 7.5% Equity Market Neutral, and 5% Funds of Funds. This state is used once we observe a change in the unemployment rate dynamic; if this momentum is confirmed then the allocation switches into the confirmed direction, or else it returns to its previous state.



Source: Candriam, simulation, January 2024

3.2. Performance of the 40/30/30 portfolio

Now that we have defined our framework, let's compare the behavior of the Reference portfolio and the absolute return sleeve. We build a 100% **Alternative Portfolio** where we allocate the strategies depending on the risk-on, risk-off and transitory phases:

- Risk-on phase: 50% Event-Driven, 16.67% CTA, 16.67% Equity market neutral, 16.67% Fund of funds

- Transitory phase: 33.33% Event-Driven, 25% CTA, 25% Equity market neutral, 17.67% Fund of funds.

- Risk-off phase: 41.67% CTA, 41.67% Equity market neutral, 8.33% Event-Driven and 8.33% Fund of funds.

We also build a portfolio combining 70% of traditional assets (our 60/40 equity/ bond portfolio) and 30% of alternative strategies with a varying allocation (risk-on/ risk-off/ transitory phases) - allowing for rounding, this roughly gives a **40/30/30**.

The figure below illustrates the Risk-on/ Risk-off periods since 1990.



Figure 10:

Source: Candriam simulation, Bloomberg, January 2024



As usual, we show performance data in the form of excess returns, adjusted by Fed. Fund rates.

Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns. Source: Candriam, simulation, January 2024

From the statistics table below, it is clear that the pure Alternative strategy achieves attractive Sharpe Ratio and maximum drawdowns over the period under review. Combining it with the Reference portfolio allows to improve significantly the 60/40 profile on all three metrics: the resulting 40/30/30 portfolio has higher returns (+0.3 % annualized), a higher Sharpe Ratio (+40%) and a lower max drawdown (-24%).

	Alternative portfolio	Reference portfolio (60/40)	40/30/30 Portfolio
Annualized excess return	4.00%	3.43%	3.67%
Volatility	4.32%	9.54%	7.43%
Sharpe Ratio	0.93	0.36	0.49
Maximum drawdown	11.28%	36.93%	28.11%

Past performance of a given financial instrument or index or an investment service or strategy, or simulations of past performance, or forecasts of future performance do not predict future returns.

Source: Candriam, simulation, January 2024

Here again, figures speak for themselves. Even after the challenges of 2022, it is legit to argue that **while 60/40 is not totally dead**, **40/30/30 appears as an appealing option** to navigate the current environment.



Concluding remarks.

Through this paper, we have seen that, except during the exceptional period of Central banks support triggered by the Great Financial Crisis, **diversifying a traditional 60/40 portfolio by introducing alternative absolute return strategies tends to improve the return/risk profile through both increasing its performance and reducing its risk** (volatility, drawdown). Furthermore, we have used the Modern Portfolio Theory to show that optimal allocations can vary depending on periods or economic regimes, which highlights the benefits of dynamic allocations.

To address this point, we built a basic risk-on / risk-off strategy based on a "nowcast" indicator related to the US Unemployment rate, which dictates the allocation of a 30% alternative sleeve between CTAs, Event-Driven, Equity Market Neutral and Funds of Funds – overweighting Event-Driven when the economy looks healthy, and otherwise favoring CTAs and Equity Market Neutral strategies.

Obviously this study is not exhaustive. There exist many other allocation techniques, many other alternative assets as well as many other potential leading indicators. Nonetheless, it has the merit of **demonstrating the added value of alternative strategies in the current – and potentially lasting – environment.** After all, remember that by construction, alternative strategies aim to generate decorrelated performance over short-term interest rates – and thus benefit from this high rate context.

In the like of Galilée who confirmed Copernic's system of Heliocentrism, we will conclude with one of our favorite maxims: "I like to think that it is better to have good conviction than having false certainty".

Risks.

All investments involve risks, including the risk of capital loss.

The most significant risks of Alternative strategies are :

- Risk of capital loss
- Interest rate risk
- Equity risk
- Credit risk
- Currency risk
- Counterparty risk
- Volatility risk
- Risk related to financial derivatives instruments
- Liquidity risk

- Emerging market risk
- Arbitrage risk
- Leverage risk
- Model risk
- External factors risk
- Index provider risk
- High Yield risk
- Commodity risk
- ESG investment risk
- Sustainability risk

This list is not exhaustive and more details on risks associated with investing in alternative strategies are available in the related strategies' prospectus and KID.

Appendix.

Index description

MSCI World Net Total Retun USD Index

(Source: Bloomberg)

© MSCI. All rights reserved. MSCI Daily Total Return Net World USD. Morgan Stanley Capital International Equity Indices in US Dollars. Indices with net dividends reinvested use the same dividend minus tax-credit calculations, but substract withholding taxes retained at the source for foreigners who do not benefit from a double taxation treaty.

BarclayHedge CTA Index

(Source: Bloomberg)

The BarclayHedge CTA Index provides a benchmark of representative performance of commodity trading advisors (CTAs). In order to qualify for inclusion in the Index, a CTA must have four years of prior performance history.

When a CTA already in the Index introduces an additional program, this additional program is added to the Index after its second year. In order to limit potential upward bias, only CTAs with at least four years of performance history are included in the Index and the performance history begins with year five, ignoring the first four years of performance. In 1999, 319 CTA programs were included in the calculation of the Barclay CTA Index. The index is unweighted and rebalanced at the beginning of each year.

Bloomberg Barclays US Agg Total Return Value Unhedged USD

(Source: Bloomberg)

The Bloomberg Barclays US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed rate taxable bond market. The index includes Treasuries, government related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency).

HFRIEDI Index: Event-Driven

(Source: HFR)

Event-Driven: Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated, and frequently involve additional derivative securities. Event-Driven exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

HFRIFOF Index: Fund of Funds

(Source: HFR)

Fund of Funds invest with multiple managers through funds or managed accounts. The strategy designs a diversified portfolio of managers with the objective of significantly lowering the risk (volatility) of investing with an individual manager. The Fund of Funds manager has discretion in choosing which strategies to invest in for the portfolio. A manager may allocate funds to numerous managers within a single strategy, or with numerous managers in multiple strategies. The minimum investment in a Fund of Funds may be lower than an investment in an individual hedge fund or managed account. The investor has the advantage of diversification among managers and styles with significantly less capital than investing with separate managers. PLEASE NOTE: The HFRI Fund of Funds Index is not included in the HFRI Fund Weighted Composite Index.

HFRIEMNI Index: Equity Market Neutral

(Source: HFR)

Equity Market Neutral strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. These can include both Factor-based and Statistical Arbitrage/Trading strategies. Factor-based investment strategies include strategies in which the investment thesis is predicated on the systematic analysis of common relationships between securities. In many but not all cases, portfolios are constructed to be neutral to one or multiple variables, such as broader equity markets in dollar or beta terms, and leverage is frequently employed to enhance the return profile of the positions identified. Statistical Arbitrage/Trading strategies consist of strategies in which the investment thesis is predicated on exploiting pricing anomalies which may occur as a function of expected mean reversion inherent in security prices; high frequency techniques may be employed and trading strategies may also be employed on the basis on technical analysis or opportunistically to exploit new information the investment manager believes has not been fully, completely or accurately discounted into current security prices. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.







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*As of 30/06/2023, Candriam changed the Assets Under Management (AUM) calculation methodology, and AUM now includes certain assets, such as nondiscretionary AUM, external fund selection, overlay services, including ESG screening services, [advisory consulting] services, white labeling services, and model portfolio delivery services that do not qualify as Regulatory Assets Under Management, as defined in the SEC's Form ADV. AUM is reported in USD. AUM not denominated in USD is converted at the spot rate as of 30/06/2023.



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