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Hedge Funds and Portfolio Management Applications

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Introduction

Although hedge funds have been around since the 1940s, they became popular in the 1980s, notorious during the 1990s and mature over the past decade. In this note you will find a brief overview of what a hedge fund is along with a description some of their most important investment strategies.

Benjamin Graham, Warren Buffett's intellectual godfather, started value investing against a fee in the 1920s. Some hedge funds today do exactly that. It is nevertheless generally accepted that the first hedge fund manager was Alfred Winslow Jones. He was a fund manager who, in 1949, combined a leveraged long stock position with a portfolio of stock shorts in an investment fund with an investment fee. He called it a "hedged fund".

Until 1966, there were only a handful of people who had formed a similar structure in an attempt to optimize market investments. A 1966 article in *Fortune Magazine* ("The Jones Nobody Keeps Up With") pointed out that the best mutual fund over the previous five years had been Fidelity Trend Fund and that Jones outperformed it by 44%. Over a 10-year period, Jones had outperformed the Dreyfus Fund (the best 10-year performer) by 87%, making millionaires out of several of his investors. During the 12 months that followed the article, more than 100 hedge funds were set up and a new industry was born.

What Is a Hedge Fund?

To qualify as a hedge fund, one has to have an *investment structure for managing a fee-based, private*, *unregistered investment pool*. Note that the term "hedge fund" describes an investment structure and not a strategy. In this sense, a hedge fund is like a mutual fund or a pension fund: it stands for an investment structure.

Since a hedge fund is merely an investment vehicle, understanding a hedge fund's *investment strategy* is central to its analysis. The elements in this strategy may include: the investment process, the financial instruments used, the maximum leverage that can be applied and the risk/return parameters.

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Typically, hedge funds are structured as *private investment pools* (limited partnerships in the United States, and corporations or trusts offshore). Mutual funds are structured as public investment companies. In consequence, the securities they offer to investors are exempt from SEC registration. As of late, some hedge funds are publicly quoted. Examples are: Oak Tree Capital Management, The Man Group and Och-Ziff Capital Management.

Since hedge funds have fewer restrictions, less control and are deemed to be more risky than traditional investment vehicles, only *accredited investors* (institutional investors and high-net-worth individuals) can invest in them. Though hedge funds' information obligations are low, investors have forced them to be more open and transparent about leverage, positions and P&L. This accredited investors requirement disappears for publicly quoted hedge funds, which are subject to increased supervision, scrutiny and transparency. Liquidity comes at a price.

There is no such thing as a typical *hedge fund manager*, as they offer different expertise and have diverse backgrounds and skills while applying a plethora of investment strategies. However, it could be said that, in general, they are entrepreneurial and convincing. They tend to initiate their hedge fund by pooling most of their own money with money from the famous 3Fs (*Family, Friends and Fools)* into an investment fund. Based on that fund, they will try to create a good *track record*. Once this has been achieved, typically over a two-year period, managers will try to increase the assets under management by targeting "outside investors." The *capital introduction* teams in the *prime brokerage division* of large investment banks (Citigroup, Goldman Sachs, Morgan Stanley, UBS, etc.) often play an important role in connecting hedge fund managers to potential, mainly institutional, investors.

Hedge funds' rewards can be quite generous (see Table 1). Typically, a hedge fund manager will charge a *management fee* of 2% as well as a 20% *performance fee*.[1] This is consistent with most hedge funds' *absolute return* objective. Since the flow of money follows performance, reviews such as the ones published by *Hedge Fund Review*, *BarclayHedge* or *EuroHedge* are important.

[1] Alfred Winslow Jones, who had a PhD in Sociology from Columbia University, decided to copy the 2,000-year-old practice of Phoenician ship captains to keep 20% of the loot. Most hedge fund and private equity managers after him have been happy to keep the precedent.

Table 1
Top Eight Hedge Fund Managers' Compensations, 2018

Hedge Fund Titans
These hedge fund billionaires added to their fortunes in 2018

Owner	Firm	Strategy	Total Hedge Fund Income (USD)	Net Worth (USD)
James Simons	Renaissance Technologies	Quant	1,600,000,000	16,550,000,000
Ray Dalio	Bridgewater Associates	Macro	1,260,000,000	16,200,000,000
Ken Griffin	Citadel	Multi-strategy	870,000,000	9,800,000,000
John Overdeck	Two Sigma	Quant	770,000,000	4,100,000,000
David Siegel	Two Sigma	Quant	770,000,000	4,100,000,000
Michael Platt	Bluecrest	Multi-strategy	680,000,000	3,700,000,000
David Shaw	D.E. Shaw	Quant / Multi-strategy	590,000,000	5,300,000,000
Jeff Talpins	Element Capital Management	Macro	420,000,000	1,560,000,000

Source: Bloomberg.

It is worth noting that hedge funds used to have *lockup periods* of up to three years. This allowed hedge fund managers to focus on long-term performance. It also severely reduced investors' liquidity. Severe market disruptions in 2001 and 2008 have led to investors being reluctant to lock up their money in vehicles in which the underlying assets are liquid assets like public stock or bonds.

Hedge funds ask for a minimum inlay, which is often between $500,000 and $1 million. *Funds of funds* have made it possible for people of lesser means to access hedge funds. A fund of funds will pool different participation levels (often as low as $10,000/share) and then invest in a number of hedge funds. Additionally, funds of funds also assist starting hedge funds in accessing capital (often in return for a participation in the fund). Funds of funds charge a fee for their services.

Hedge Fund Strategies

Global Macro Investing

Though macro managers only represent a small percentage of the hedge fund industry (11% in 2018), they tend to take the largest concentrated positions and are often highly leveraged.

Strategy-wise, these funds have very little limitations. Starting from a top-down approach, using macroeconomic data such as interest rates, inflation, savings rate and public deficit, macro funds typically look for mispricings based on in-house financial models. This data, and especially its evolution, provides macro funds with an understanding of where the market *is*. Their models provide them with an assessment of where the market *should be.* When asset prices are out of sync with their models, macro funds begin monitoring them and will enter the market when they judge that an inflection point is near. Examples include: the devaluation of the GBP in 1992;

junk bonds and emerging market debt in the early 1990s; the collapse of parity between the Argentine peso and the U.S. dollar in 2001; the subprime crisis of 2008; the European crisis of 2010; the devaluation of the Argentine peso in 2014 and the outcome of Brexit in 2019.

For example, one could model the relationship between macroeconomic data and asset prices as falling on a bell curve.[2] Of the prices, 65% should then fall within one standard deviation from the mean. Once the relationship starts to fall outside plus or minus one standard deviation from the mean, the manager may start monitoring the situation. Once the relationship exceeds two standard deviations, the manager could then enter a position. Note that this position is based on the view that the relationship is mean reverting.

As an example: On August 9, 2019 the GBP was trading at 0.9213 vis-à-vis the EUR, which was almost its low over the past 10 years (range: 0.6845-0.9383, see Figure 1).

Figure 1
EUR/GBP 09 Aug 2009 – 09 Aug 2019

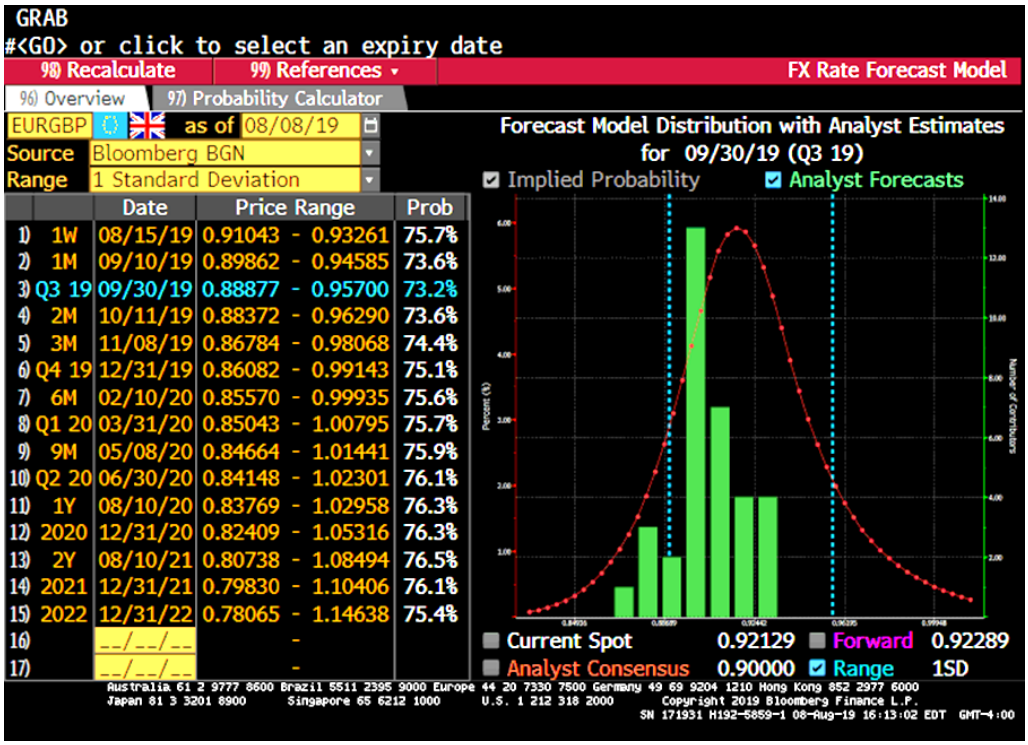
Source: Bloomberg.

[2] Statistically, asset price returns distributions are better reflected by a t-4 distribution.

This reflected the uncertainty that existed around the way Great Britain would leave the Euro-zone (hard vs. soft Brexit) as well as the fact that Boris Johnson had just been appointed as Prime Minister. This took place through an internal process of the Conservative Party, not an election. Markets were apprehensive about gaffe-prone BoJo, a controversial yet colorful former mayor of London dubbed "the British Donald Trump".

With the present EUR/GBP market trading at 0.9213, analysts at large financial institutions forecasted with 73.2% certitude that by the end of September the market price would range between 0.8888-0.9570 (see Table 2).

Table 2
Forward EUR/GBP Analysts Forecasts



Source: Bloomberg.

Your hedge fund is specialized in macro economical and geopolitical analysis. Based on your models and assessments, you have a strong conviction that by the end of September the range will be between 0.85-0.90 (85% conviction rate). So, you go long GBP against EUR.

Because of their mandate (to identify extreme price-value disparity between assets), macro managers have almost no rules and no restrictions (George Soros: "I don't play the game by a particular set of rules; I look for changes in the rules of the game."). They can take positions in commodities, forex, stocks, bonds, futures and options, money markets and distressed property. As the opportunities they look for are limited, you will at times find them playing in the "backyards" of other strategies, as one fund manager puts it: "to kill time and get an extra return."

People are most familiar with global macro strategies, since these have been the most publicized, often because of their global market impact (e.g., devaluation of the Thai Baht in 1997 has been blamed on hedge funds) and large P&L swings (Soros is said to have made $1 billion from shorting the GBP in 1992 and to have lost $400 million from speculating against the JPY two years later).

Fixed-Income Arbitrage

Fixed-income arbitrageurs will search for investment returns by buying an underpriced fixed-income security and simultaneously selling an overpriced fixed-income security. This means that there is a mathematical or historical relationship between both securities, which the arbitrageur deems temporarily out of sync.

> A well-known fixed-income arbitrage trade is *cash and carry*. The arbitrageur detects a *future* that is priced too high relative to its *underlying asset*. The arbitrageur will then buy the underlying asset and simultaneously sell its future. On the date of settlement, she will deliver the carried asset and receive the cash. This cash amount exceeds the original amount and its financing cost.

Fixed-income arbitrageurs will look at every component of the instrument and compare it with the same components of other instruments. When out of sync, they will arbitrage it out by buying the instrument with the cheap element and selling the one with the expensive element. This means that all other components will have to be hedged out. Arbitrage can be conducted with discrepancies in cash flows, timing of cash flows, credit risk, volatility, currency, etc. These arbitrage opportunities will often be based on complex pricing models.

Three things are worth mentioning: 1) Exposure to elements that are not part of the arbitrage should be hedged; 2) Arbitrage opportunities are normally very small and therefore will be leveraged; and 3) The best opportunities occur when nobody else has spotted them.

For example, on November 1, 2020, the following bonds are outstanding:

a. World Bank 8.5% AAA 11/2025; Yield: 6.5%; underlying amount: $250 million

b. World Bank 0% AAA 11/2025; Yield: 6.3%; underlying amount: $1 billion

Because of the higher liquidity, the second bond normally trades 5-10 basis points below the first one. You think that yields will revert to the mean. Consequently, you go long on the 8.5% bond and short on the 0-coupon bond. A dollar-for-dollar long/short, however, would expose you to interest rate risk (the duration of a is 4.43, while for b it is 5). To be duration-neutral you buy $100 million in WB 8.5% 11/2025 and sell $88.6 million in WB 0% 11/2025.

Setting up the position on 01/11/2020 would have given the following:

+ $92.3 million in WB 8.5% AAA 11/2025 at $108.31 (paying $100 million, ignoring current coupon)

- $120.3 million in W B 0% AAA 08/2025 at $73.67 (receiving $88.6 million)

Note that the net cash outflow of this operation would be $11.4 million (ignoring financing and repo costs).

If a fortnight later the yield difference is back to 10 Bps (6.40% vs. 6.30%), the investment return would be around 3.5% ($406,000/$11.4 million). The bond prices would be $108.75 and $73.67 respectively. Annualized, this results in a 145% return.

Relative Value

Equity's answer to fixed-income arbitrage is called *equity market neutral, equity long-short, statistical arbitrage, relative value* or *pair trading.* Hedge funds specializing in these fields typically set up a position in an undervalued stock and offset the market (or systematic) risk by going short on an overvalued stock. As an alternative to a single stock, baskets of stocks and, increasingly, indices (ETFs) are used. The principle is straightforward: simultaneously buy what is cheap and sell what is expensive, relatively. In its purest expression, the hedge fund manager eliminates market risk (*market neutral*). This is done either through neutralizing the dollar amount, the beta or the volatility of both sides of the trade. Some hedge funds marry a relative value position with a directional bet (*long-short*). For others, the relative value decision is based on algorithmic models (*statistical arbitrage*). These different strategies are sometimes commonly referred to as *relative value* or *pair trading*.

Though the idea may seem simple, the investment process is more involved. In a first stage, the hedge fund develops an investment process able to determine over- and under-valuations. To be efficient it will need a filtering process. This process is mostly model-based. Large investment banks have built extensive software platforms to smooth out this selection process.

Let's look at an example:

> Imagine that a hedge fund manager has built a model based on EBITDA, P/E, interest coverage, capex and dividend yield. The manager has back-tested the model with good results. Applying the model to large beverage companies, he looks at the relationship between Pepsi (PEP US) and the SP 500 Index, which his model shows to be P/E reverting to parity (same P/E for both). On his Bloomberg screen he calls up the P/E graph for both and sees this confirmed (see Figure 2).

Figure 2
Price/Earning Pepsi Cola and SP500 INDEX 01 Jan 2010 – 09 Aug 2019

Source: Bloomberg.

Based on his model, he expects this gap to close and hence should go long the cheap asset (SP500) and short the expensive one (Pepsi Cola). Additionally, his conviction is that the market is due for a correction as P/Es stand at an almost 10-year high. Consequently, he goes short USD 50 million of Pepsi Cola and long USD 25 million of SP500. If the hedge fund manager had wanted to be USD-neutral then the amounts would have been equal.

An alternative way to set up a long-short position could have been to look at Pepsi versus a similar stock. Coca-Cola would be the obvious choice (see Figure 3).

Figure 3
Price/Earning Pepsi Cola and SP500 INDEX 10 Aug 2009 – 09 Aug 2019

Source: Bloomberg.

When looking at this spread (Pepsi-Coca Cola P/E) over the past 10 years, one finds that the mean P/E differential is -0.833. At time of analysis the P/E spread is -1.157 or a mere -0.21 standard deviations from the mean. Hence, as a spread based on previous assumptions a long-short in SP500 vs. Pepsi would make more sense statistically.

Some notes worth taking:

- Always check how expensive it is to set up a short position. These stocks have to be borrowed and at times can be very expensive. Also, in some countries it is illegal to short stocks.
- No two companies are alike, and it is impossible to put all differentiating factors into a model.
- It is not always possible to diversify all risk. For instance, when going long on GM while going short on Ford, how does one eliminate the fact that GM is also in the jet engine, leasing, investment management, plastics and broadcasting businesses?

Risk Arbitrage

Risk or *merger arbitrage* is an event-driven strategy. Event-driven strategies speculate on the probability of a certain event taking place within a given time period. Risk arbitrageurs determine whether an announced merger or acquisition will close, as well as the time frame within which this will happen. Typically, they go long the acquired company and simultaneously go short the acquiring company.

A merger or acquisition can take on different forms, but typically the merger or acquisition will be paid for in cash, in shares or with a combination of both shares and cash. After an acquisition is announced, the target company will typically trade at a discount to what the acquirer is offering. This discount represents the risk that is inherent in the acquisition as well as the time value of money. The art of risk arbitrage lies in correctly assessing the duration between the announcement date and the effective acquisition date and in assessing the risk that the announced acquisition terms might change. These changes can include withdrawal of the offer, a counter-bid, a rejection by legal entities, etc.

It should be noted that professional risk arbitrageurs do not trade on rumors or speculative information. A trade is only entered upon announcement and after doing due diligence. This is different for momentum players, who engage in the trade upon a rumor in the hope that if announced they will make money (as risk arbitrageurs will move prices).

The following example illustrates this concept:

> The following quote appears on Reuters: "Shares in ABC and 123 suspended because of a pending announcement." One of your brokers phones to tell you that there is a rumor in the market that ABC will pay $95 per share of 123. Before the suspension of both stocks, ABC was trading at $12 and 123 at $70.
>
> Minutes later a new headline appears on Reuters: "ABC to pay five shares of ABC and $30 in cash for every share of 123, pending 90% approval."
>
> You think that the acquisition makes sense: a big letter company buying a medium-sized number company in a bid to diversify. As the merged company will not have a dominant position, you expect approval from the authorities. Also, the generous premium paid should be convincing for the shareholders of 123, and therefore you do not anticipate problems with the 90% hurdle. You do not expect another company to want to pay as much for 123. From experience you know these straightforward acquisitions take about three months to finalize. The three-month borrowing rate is presently at 6%. Based on your risk assessment, a fair discount rate is set at 5%.
>
> ABC re-opens at $11 and 123 at $80.
>
> According to your calculations, you would set up the spread as long as you can buy 123 better than:
>
> ((5*ABC)+$30)*(1+3 months rate/4)*.95). Or, in our example:
>
> ((5*$11)+$30)*(1.015)*.95)= $81.96. At $80, 123 is trading at a discount of 7.3%. Indeed, par would be ((5*$11)+$30)*1.015 or $86.275.
>
> You decide, after checking if you can borrow for ABC, to set up the following spread:
>
> - 1,000,000 ABC at $11
>
> + 200,000 123 at $80

A month later you re-assess the position. Given that the acquisition is going according to plan, you expect a discount of 3%. The two-month borrowing cost is now at 6%. ABC is trading at $13 and 123 at $95.

With ABC at $13 you calculate that 123 should be worth ((5*$13)+$30)*1.01*.97 = $93.07. You find the spread overvalued (at a discount of only 1%) and decide to unwind your position:

+ 1,000,000 ABC at $13

- 200,000 123 at $95

The profit is $1 million. To set up this position you had to borrow $5 million (calculated as the difference between the long and the short positions) at, let's say, 6%, or an extra cost of $5 million*.005= $25,000. Assuming an equal repo cost, you make $950,000.

Distressed Arbitrage

Distressed arbitrage investing is, like risk arbitrage, an event-driven strategy. In the case of distressed arbitrage, the assessment starts with the announcement of a company experiencing financial or operational difficulties (for example, reorganizations, bankruptcies, distressed sales or other corporate restructurings).

When such an announcement is made, traditional investors who own securities in these companies typically sell them (custom or legal reasons). As a consequence, a distortion between the intrinsic value and the price often arises. That is when hedge funds specializing in distressed arbitrage can find arbitrage opportunities. Combining their knowledge of the bankruptcy process, the bankruptcy code and fundamental analysis of companies, they create value for their shareholders by taking advantage of mispricings. They will invest in common stock, bank debt, corporate debt, warrants and options.

There are often two reasons why a company with good business may fall into financial or operational problems. One is an outside event (e.g., a lawsuit, a rogue trader, an epidemic or an earthquake); the other is a bad capital structure (i.e., taking on more debt than it can service). In either case, the company will have to deal with its creditors. Most developed countries have a bankruptcy code outlining the rules governing these situations. The majority of those bankruptcy codes give companies two choices: 1) liquidation (e.g., Chapter VII of the U.S. Bankruptcy Code) or 2) protection against creditors (e.g., Chapter XI of the U.S. Bankruptcy Code). Both situations create opportunities for hedge funds.

There are two ways in which hedge funds try to take advantage of distressed situations. One is by searching for undervalued securities in a distressed company. Once identified, they will go long that security and have it on their books until an *exit catalyst* (an event that changes the market's perception of the distressed company) gives them the opportunity to sell it at profit. Because distressed situations are very chaotic, a second opportunity is offered to make money. Often, the *relative values* of different securities of the same distressed company are out of sync. In this case, hedge funds get the opportunity to buy the undervalued security and simultaneously short the overvalued security. Once the correct relative value is reflected in the price, the trade is unwound.

An example:

It's a quiet Friday afternoon and you are on the line with one of your B-school friends exchanging plans for the weekend, when suddenly you see the following quote hitting your Bloomberg screen: "ohwhymeagain.com filing for Chapter XI." Immediately you phone some bankruptcy lawyers, business analysts, accountants and turnaround managers.

After doing your homework you realize that this company has a great business model, loyal customers, creates a substantial amount of added value and could have a promising future. The only problem it has is leverage (too much debt). You connect with banks, other investors and other major distressed securities players. You begin to have a good feel for the situation and have a strong conviction that most senior debt holders will agree to convert the debt into equity.

From Reuters, you get following info:

1. ohwymeagain.com (OWMA) long-term debt downgraded from BBB to C-
2. OWMA 8% 2022 subordinated bond falls 35% to $60
3. OWMA shares fall 70% to $0.50

After making your calculations and talking to the major creditors, your assessment of the situation is that debt will be turned into equity. You don't expect any major debt holder to object (as liquidation would be the only alternative, and this would leave bondholders with an even worse situation). You also think that holders of the subordinated bond will not have a lot of bargaining power and will get around 1,000 shares for every bond (nominal of $1,000). The whole process should take five months to finalize.

Upon checking with your prime broker, you hear that lending $10 million (nominal) of the subordinated bonds will cost you $75,000 for six months. You decide to take up the lending.

You sell $10 million of the subordinated bond and get $6 million (assume no accrued interest) and, simultaneously, you buy 10 million shares of OWMA for $5 million.

The process takes a little longer than expected, and after six months the subordinated bonds get exchanged for common stock with a ratio of 1,010/1. For every $1,000 denominated bond you get 1,010 shares. So, instead of owing your prime broker $10 million in 8% 2022 subordinated OWMA, you owe him 10.1 million shares of common stock. This means that you have to buy another 100,000 shares in the market (let's assume the price hasn't changed) at $0.50 each.

With this operation, you have pocketed: $1 million - $75,000 - $50,000 + $30,000 (six months' interest at 6% on $1 million) = $905,000.

Shareholder Activism

The hedge fund strategy that has received wide attention in the press over the past decade is shareholder activism. While typical long-only funds buy stocks of well-run companies, activists tend to target companies that are managed suboptimal (assuming the stock price reflects this). As a shareholder they then engage with management, board and/or other shareholders to achieve change. Most often these changes pertain to:

- Capital structure
- Capital allocation
- Corporate governance
- Cash levels
- Mergers and acquisitions
- Business performance

To achieve these changes, they use a variety of techniques:

- (Threat of a) proxy fight
- Management and/or board engagement
- 13 F-filings
- Op-eds and public appearances
- ...

Academic journals and public articles have documented the positive effect these interferences have had on the valuation of these companies (and hedge funds' performance). That has led large institutional funds such as Blackrock or Calpers to apply shareholder activism techniques as well.

Momentum Funds

Momentum hedge funds' strategy is to outsmart the market by being faster in reacting to opportunities. Their trades are not complex and are generally kept on their books for a couple of hours to a couple of days. They are very sensitive to news, rumors, market upgrades and information about the flow of the market. They will typically direct their business to the broker, who delivers the timeliest information.

One way to understand momentum is as arbitrageurs between the two subsystems of our thinking,[3] as developed by Nobel Prize winner, Daniel Kahneman. According to Kahneman, our thinking process is subdivided in two parts. Type 1 is fast, intuitive, unconscious and based on heuristics. It is the system we use for most of our daily activities. Type 2, on the other hand, is slow, analytical and calculating.

So, when for example a company issues a profit warning, a momentum fund will short its stock (heuristic: profit warnings lead to PMs analyzing the stock and typically reducing their holdings, putting pressure on stock). Portfolio managers and their analysts will analyze the announcement, talk with buy-side analysts, review their investment thesis and analyze the company. Then, they will present their findings and recommendations to the investment committee where an investment (or disinvestment) decision is made.

Some other examples:

- A market rumor that ABC will buy 123. Momentum funds will buy 123 and short on ABC in anticipation of the announcement.
- The decision of the Russian government to fail on their bonds was for many momentum players a reason to immediately short bonds in Poland and Hungary because of what is called the "sympathy effect" or "knock-on effect."
- If Nasdaq is down 5% overnight, momentum investors will typically sell tech stocks at the open in Europe. They will do the reverse if they see pre-open on Nasdaq is quite favorable and tech stocks in Europe are trading down.

These are only some of the strategies hedge funds use. Of course, there are many others: convertible arbitrage, sector funds, emerging market funds, IPO funds, etc.

[3] *Thinking Fast and Slow*, Daniel Kahneman, Random House, 2013.

The important thing is to convince investors that you have the skills (a proven track record is indispensable) to make their investment grow above similar strategies and preferably with lower risk. Once they confide their money to you, you have to deliver. If you do, you will see that your funds under management will grow, and so too will your management and performance fee.

Portfolio Management Applications

Like venture capital, commodities, private equity, real estate or commodities, hedge funds belong to the universe of alternative investments. An asset class is deemed to be *alternative* when it enjoys a low correlation with traditional asset classes such as stocks and bonds. In reality, investors are primarily searching for low correlations with stocks (as well as the general economy, which these reflect).

Low correlation coefficients reflect strong diversification effects. In other words, by combining asset classes with low correlations, investors lower their risk while increasing returns. What follows is an example of the correlation of hedge funds and some distinguished hedge fund strategies, with other asset classes (see Table 2).

Table 2
Historical Correlation Jan. 2009-Dec. 2018

Historical Correlation[1]: January 2009 - December 2018 — Click Asset Class to Highlight — RESET

	Positive	Negative
High	0.7-1.0	(0.7)-(1.0)
Moderate	0.4-0.7	(0.4)-(0.7)
Low	0.0-0.4	(0.0)-(0.4)

	Investment Grade Bonds	Cash	Commodities	Currencies	Equity Market Neutral	Event Driven	Global	Hedge Funds	International Equity	Long/Short Equity	Managed Futures	REITs	S&P 500*
Investment Grade Bonds	1.00												
Cash	(0.05)	1.00											
Commodities	(0.16)	0.01	1.00										
Currencies	(0.12)	(0.09)	(0.59)	1.00									
Equity Market Neutral	0.01	(0.08)	0.41	(0.64)	1.00								
Event Driven	(0.16)	(0.13)	0.55	(0.41)	0.46	1.00							
Global	(0.02)	(0.08)	0.57	(0.63)	0.56	0.76	1.00						
Hedge Funds	0.05	(0.16)	0.50	(0.46)	0.57	0.89	0.79	1.00					
International Equity	0.03	(0.07)	0.57	(0.69)	0.60	0.74	0.96	0.78	1.00				
Long/Short Equity	(0.10)	(0.13)	0.50	(0.52)	0.61	0.84	0.87	0.91	0.84	1.00			
Managed Futures	0.41	(0.04)	(0.06)	(0.04)	0.12	0.11	0.14	0.44	0.13	0.24	1.00		
REITs	0.30	(0.04)	0.22	(0.35)	0.35	0.43	0.72	0.49	0.67	0.53	0.20	1.00	
S&P 500*	(0.06)	(0.08)	0.52	(0.52)	0.50	0.71	0.97	0.74	0.87	0.83	0.15	0.73	1.00

Source: Guggenheim Investments.

While hedge funds often charge high management and performance fees, their correlation with US (SP500), International Equity (developed markets outside US and Canada) and Global Equity (world developed markets, large and mid cap) is high: 0.74, 0.78 and 0.79 respectively.

As this note explains, there are different hedge fund strategies. Some of these, like event driven or long-short, have high correlations with stocks. In the case of event-driven (mainly risk arbitrage), this is because most M&A-activity is successful in a bull market but is far less so when stocks fall. As discussed, long-short strategies equally take a long directional bet, increasing correlations with stock markets.

There are, however, strategies that have better diversification effects. As can be seen, Managed Futures and Equity Market Neutral are examples of such strategies. Though beyond the scope of this note, investors would do well to understand the circumstances under which correlation coefficients increase or decrease.