

# Hedge Fund Education Series

## Part 2: Inside the *Black Box*

Reports in this series	
Highlights	Page
<b>Part 1: What are Hedge Funds?</b>	
<b>Part 2: Inside the Black Box</b>	
Risks that Hedge Fund Managers Take	1
Market Risks	2
Interest Rate Risk	2
Prepayment and Extension Risk	3
Concentration and Liquidity Risk	3
Currency Risk	4
Derivatives Risk	4
Credit Risk	5
Credit Risk and Market Risk are Interconnected	7
General Trading Techniques	8
Leveraging	8
Short Selling	9
Hedging	9
Arbitrage	10
Conclusion	10
<b>Part 3: Asset Characteristics of Hedge Funds</b>	
<b>Part 4: Hedge Fund Strategies</b>	
<b>Part 5: Implementation</b>	

**In order to confidently invest in hedge funds, it is useful to open the hedge fund black box and gain an understanding of investment and trading approaches employed by hedge funds managers. This issue lays out the building blocks of hedge fund performance generation. It examines the types of risk that hedge funds seek exposure in search for returns. It also highlights various hedge fund trading techniques.**

Risk and return are closely linked in financial markets. Not surprisingly, hedge funds' ability to generate performance derives from their skills in taking calculated risks. The first part of this report covers in detail the broad array of risk sources that hedge funds typically seek exposure to.

### Risks that Hedge Fund Managers Take

Hedge Fund investing and trading typically involves assuming a combination of market and credit risk.

**Market risk** specifically addresses asset price risk. The market prices of financial instruments in which a hedge fund invests can be highly volatile. For instance, price movements of derivative contracts are influenced by, among other things, interest rates, market volatility, the price of the underlying asset or, changes in liquidity conditions. Changes in the financial market environment are often the fundamental cause for price moves, including changing supply and demand relationships, fiscal, monetary and exchange rate policy, or other national and international political and economic events. All these factors are ultimately uncertain and news about them can influence prices giving rise to market price risk.

UBS Financial Services Inc. (UBS FS) is pleased to provide you with information about alternative investments. There are a few points we would like to raise with you at the outset.

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**Credit risks** arise, simply put, when a debtor counterparty is unable or unwilling to service an obligation.

Hedge fund strategies arise from taking speculative positions in a combination of market and credit risk instruments for which they believe that the risk-reward relationship is attractive. Such positions are often referred to as arbitrage, or **risk arbitrage**. They are at the heart of hedge fund activities. Through such positions, hedge funds are able to implement a variety of “non-directional,” “semi-directional” and “directional” strategies, whereby direction here refers to exposure to market direction, i.e. being “long the market.”

#### *Non-directional*

Non-directional strategies include a combination of convertible arbitrage, distressed securities, event-driven, risk arbitrage, equity market-neutral, relative value arbitrage and statistical arbitrage. It is useful to remember that the correlation between absolute non-directional return strategies and equity markets has been higher than the term “non-directional” might imply. This suggests that the case for non-directional return strategies should not be viewed as based on diversification grounds alone, although the correlations are still more attractive, in portfolio diversification terms, than most traditional assets or strategies.

#### *Semi-directional*

Semi-directional strategies include those with ‘long’ and ‘short’ positions, where the manager aims to maintain some limited, but varying (‘long or short’) exposure to the underlying market direction.

#### *Directional*

Directional return strategies have historically produced lower returns when equity or fixed markets have fared poorly and higher returns when those markets have done well. Directional strategies explicitly retain

exposure to some major market movement. They can involve concentrated portfolios (industry, or sector focused or global) together with strategies using macro bets (currency, theme, or market timing, for instance). They may be, for instance positions in emerging market fixed-income and equity markets, exposure to global macro themes or just to equity markets in general.

## Market Risks

### Interest Rate Risk

Interest rates are the principal determinant of fixed income securities prices and they represent one of the most important factors contributing to a company’s debt risk profile. Two commonly used measures of a security’s sensitivity to interest rate changes are ‘duration’ and ‘convexity’. These two measures provide an important framework for the evaluation of a security’s sensitivity to interest rate movements.

Duration measures the sensitivity of the market value of a fixed income security to changes in narrow bands of parallel interest rate movements. As interest rates deviate from a bond’s initial yield, however, the accuracy of the duration measurement lessens. This is due to the convexity of the price/yield relationship for a fixed income security. Convexity, simply stated, is a measure of the rate and direction by which duration will change as interest rates change. For example, callable corporate bonds typically exhibit “negative” convexity; as interest rates fall, their values increase more slowly than non-callable corporate bonds of equivalent duration. Often adding a call provision, which is just a call option embedded in the bond, also reduces the duration of a fixed-coupon bond. Furthermore, as interest rates rise – a situation that generally causes fixed income securities to lose value – callable bonds may depreciate more quickly than other bonds of equivalent duration.

- *Relevant Trade*: Fixed income hedge fund managers discover and exploit inefficiencies in the pricing of bonds (by understanding duration and convexity characteristics) given changes or expected changes in interest rates.

## Prepayment and Extension Risk

Mortgage Backed Securities (MBS) are created from mortgages which are pooled together, packaged, and sold through the issuance of pass-through certificates. Some MBS are also used to collateralize a special-purpose entity that issues a series of debt-like instruments. The underlying mortgages are highly sensitive to interest rates because they may be prepaid earlier or later than expected by the borrower, depending on levels of interest rates. The repayment activity of the underlying mortgages, in turn, affects the repayment timing and duration of the MBS and therefore its market value. For example, as interest rates rise, home owners with fixed rate mortgages are less likely to prepay their mortgage obligations. This, in turn, potentially extends anticipated prepayments which increases the duration of these securities. This increase in duration may result in more price risk going forward. Additionally, delayed principal payments cause a greater decline in value for a typical MBS than for a traditional fixed-income security.

Both mortgage pass-through securities and collateralized mortgage obligations (CMOs) generally exhibit negative convexity (i.e. the price impact of yield changes declines for lower mortgage rates). Mortgage prepayments are also influenced by a number of non-interest rate related factors, such as seasonality, the aging of the securities and certain macroeconomic factors including housing prices, bank financing charges, and expectations of economic prosperity. As a result, these types of securities cannot be analyzed in the same way as a treasury security or corporate debt.

- *Relevant Trade:* Mortgage Long/Short hedge fund managers model prepayment speeds and delinquency rates under a variety of scenarios to arrive at fundamental securities pricing and trade on the difference between their view on optimal value and market prices.

## Concentration and Liquidity Risk

### *Concentration Risk*

A portfolio of investments or activities is subject to additional risk when it exhibits a high concentration in a specific currency, industry, or security type. For example, concentrations in securities of a specific industry may expose a fund to undiluted industry risks that could lead performance to deviate significantly from general market trends. In similar manner, significant concentrations in specific security types may expose a fund to greater market price risk because of interest rate movements or other market conditions. For instance, security prices may drop as the demand for a specific security falls due to regulatory changes, the industry falling out of favor or because of a change in market risk perception.

- *Relevant Trade:* Hedge funds are often able to spot these opportunities and profit from premiums or discounts from concentration risk.

### *Liquidity Risk*

Hedge funds sometimes invest in securities, bank debt and other claims which are subject to legal or other restrictions on transfer, or for which no liquid market exists. The market prices for such investments tend to be volatile and may not be readily ascertainable. Hedge fund managers run the risk that they may not be able to sell these securities when they desire to do so or to realize, what they perceive to be their fair value in the event of a sale. Also, the sale of restricted and illiquid securities often requires more time and results in higher brokerage charges or dealer discounts and other selling expenses than does the sale of securities eligible for trading on national securities exchanges or in the over-the-counter markets. If sophisticated investors, who do not require immediate liquidity for their investments, are able to hold on to these investments they often have the potential to receive handsome returns.

In another case, highly complex securities that have very narrow markets may trade at lower prices which

reflect their lack of liquidity; a security's bid/ask spread may offer insight into its liquidity with larger spreads often indicating greater liquidity risk. Additionally, liquidity risk can be measured by the yield differential between a benchmark security at a specific maturity and a security with different attributes, but with a similar maturity.

- *Relevant Trade:* These risks result in temporary mispricing and which allows hedge fund managers to take "long" positions in securities that are expected to increase in value and "short" positions that are expected to decrease in value due to liquidity considerations.

### Currency Risk

Foreign-exchange risk premiums represent the market's anticipated excess return to holding foreign currency relative to holding domestic currency. This risk premium can be time varying. Over the longer term it should be related to interest differentials and thereby to the economic environment in the respective countries.

- *Relevant Trade:* Currency hedge fund managers decipher and trade on exchange-rate risk premiums by considering relationships given interest differentials, the gap between current and long-run equilibrium exchange rates, and the expected change in long-run exchange rates, amongst other considerations. Also, global macro funds often express relative directional bets on countries using currencies rather than other vehicles due to the liquidity of these instruments.

### Derivatives Risk

Derivatives risk is a very broad term that includes the use of derivative products such as futures, options, swaps, floating rate notes, structured notes amongst others. Utilization of derivative products for speculative purposes can increase risk. Conversely, the use of derivatives for hedging purposes can play a role in lowering risk.

- *Relevant Trade:* Hedge fund managers use listed and OTC options for hedging and speculative purposes. They also use credit default swaps to execute directional shorts and for hedging purposes.

#### Market Risk Arbitrage Illustration

Most hedge funds that trade on market risks aspire to pursue an active money management style designed to achieve consistent superior investment results irrespective of the returns generated by the overall markets. For instance, a market risk hedge fund manager may develop an investment philosophy that is value and event focused, specializing in the identification and analysis of securities that can benefit from extraordinary transactions. This manager may then choose to primarily invest in securities subject to restructurings, takeovers, exchange offers, spin-offs, financial reorganizations and other special situations. This approach has historically provided returns that are transaction specific and therefore largely uncorrelated with movements in other markets.

The manager may frequently protect its positions directly or indirectly through opposing equity or derivative positions to promote principal safety and return stability. The manager may attempt to minimize its loss exposure in each specific situation by having position sizes determined by total potential loss as well as actively utilizing stop-loss trading techniques.

The more sophisticated hedge funds determine the systemic risk in each position in addition to the event risk idiosyncratic to that position, factoring in the strategic, legal and interpersonal forces, completing an enterprise valuation, and modeling complex deal phenomena with various probability trees. Once risk is determined, it becomes a valuable input to determine position size. Further, risk assessment is a dynamic, not static. The good hedge funds employ a rigorous investment process to evaluate potential investment opportunities. Such a process often begins with the due diligence process, consisting of a thorough business review of the industry, competitive landscape, products, customers, return on capital and management of an issuer.

This initial assessment is then followed by extensive asset valuation, financial analysis, cash flow analysis, legal and accounting review, and comparable credit and equity analyses. It often also includes a thorough assessment of how a particular investment fits into the overall investment strategy of the portfolio. This approach to market risk investing provides hedge funds with the potential to effectively arbitrage market risks.

## Credit Risk

Credit risk is very different from market risk. Credit risk is risk due to uncertainty about a counterparty's ability or willingness to meet its debt obligations. There are many types of counterparties from individuals to sovereign governments as well as many different types of obligations from auto loans, corporate loans, to derivatives transactions; therefore credit risk takes many forms.

In assessing credit risk from a single counterparty, hedge funds almost always consider what they refer to as 'the default probability', their credit exposure and the amount they expect to recover in the event of bankruptcy or default. The default probability is an assessment of likelihood that counterparty will default on its obligation, either over the life of the debt, or over some other specified time period. Related concepts are "credit exposure" and "recovery rates". Given that default has occurred, credit exposure is an assessment of how large the creditor's exposure is to the default. This is different from total loss, for the total loss depends in part on the amount that can be recovered. The recovery rate is an approximation of the exposure which may be recovered through bankruptcy proceedings or settlement. Credit hedge fund managers arrive at their own views of credit exposure and recoveries and take 'long' or 'short' positions in the underlying security.

Many forms of credit risk - especially those associated with larger institutional counterparties - are complicated, unique, or are of such a nature that that it is worth assessing them in a less formulaic manner. The term credit analysis is used to describe any process for assessing the credit quality of a counterparty. While the term can encompass credit scoring, it is more commonly used to refer to processes that entail human judgment. In credit hedge funds, credit analysts examine balance sheets, income statements, industry trends and the economic environment to make informed speculative decisions.

## Relevant Trades:

- **Mortgage Backed Securities (MBS) Arbitrage:** These managers seek to identify and exploit long/short opportunities in U.S. Government Agency MBS, while seeking to neutralize the portfolio to interest rate sensitivity and varying prepayment rates.
- **Opportunistic MBS:** These managers attempt to identify and exploit opportunities in fundamentally undervalued complex MBS.
- **Municipal Arbitrage:** This takes advantage of the arbitrage opportunity between the tax-exempt and taxable markets by investing in long-term municipal bonds and hedging interest rate risk in the taxable markets.
- **Relative Value Preferred:** Managers trading in this space opportunistically invest in subordinated securities of high grade companies, while seeking to neutralize the portfolio to interest rate sensitivity and spread widening.
- **Fixed Income Relative Value:** These managers primarily focus on spread trading within high grade MBS.
- **Asset Backed Securities (ABS):** These managers deal in diversified ABSs and exploit inefficiencies in investment grade securities backed by hard assets (non-consumer based risk) and securitized corporate debt as well as various strategic short positions to extract value.
- **Leveraged Loans:** Hedge fund managers operating in this credit space seek to invest in a diversified portfolio of primarily senior, secured, and floating rate bank loans to non-investment grade companies.

### Credit Risk Arbitrage Illustration

A corporation may have, for example:

- a) An over-leveraged balance sheet due to a failed acquisition or growth strategy.
- b) Deteriorating profitability due to a high cost structure, technological change, increasing competition, change in regulatory environment or litigation.
- c) An inability to refinance existing debt in the capital markets; or
- d) Poor management.

Obligations of such a corporation may trade at a discount to their fundamental or recovery value for a variety of reasons, for example:

- a) Investor segmentation. Many institutional investors are either unable or unwilling to hold these obligations, and as a consequence may sell or refrain from buying without properly considering recovery prospects.
- b) Valuation difficulties. These obligations may be difficult to value for a variety of reasons such as a corporation's organizational complexity or legal circumstances, lack of transparency or rapidly changing financial situation; or
- c) Time delay. Investor interest may be reduced as a result of the length of time required to resolve corporate financial problems or the length and complexity of a workout or restructuring.

Hedge funds may invest in the debt of such companies by taking 'long or 'short' directional exposure in its debt/ high-yield securities. Such securities are generally not exchange-traded and, as a result, these instruments trade in the over-the-counter marketplace, which is less transparent than the exchange-traded marketplace. In addition, many hedge funds will invest in bonds of issuers that do not have publicly traded equity securities, making it more difficult to hedge the risks associated with such investments. These securities face ongoing uncertainties and exposure to adverse business, financial or economic conditions which could lead to the issuer's inability to meet timely interest and principal payments. The market values of certain of these lower-rated and unrated debt securities tend to reflect individual corporate developments to a greater extent than do higher-rated securities which react primarily to fluctuations in the general level of interest rates, and tend to be more sensitive to economic. Companies that issue such securities are often highly leveraged and may not have available to them more traditional methods of financing.

Hedge funds attempt to correctly evaluate the value of these assets and hedge their "long" or "short" positions either directly or through credit default swaps.

### Hedge Fund Trade Construction

A hedge fund may elect to trade on this opportunity. In order to do so, it may engage in fundamental credit analysis based on various matters determining corporate cash flows, such as measures of operating performance, balance sheet structure and industry conditions, to ascertain the current or potential ability of a corporation to service and repay debt. Its investing strategy may then be to identify value in the underlying assets or credit obligations of this corporation, in terms of cash flows and enterprise value relative to the hierarchy and other features of claims in its capital structure. It may also attempt to earn current income that an investment in obligations of such a corporation may afford, and to seek a means ultimately to realize the value of the investment through exit (and realize capital gains).

- a) Timing: The hedge fund may seek to commit capital based on a thorough understanding of the investment opportunity. For example, in stressed or distressed opportunities, it may tend to invest in the late stage of recovery where obligations still trade at a discount to their perceived fundamental value, but the causes of stress or distress are already known and there may be indications that these problems are being resolved. This approach may forego potential gains from investing at an earlier stage, but reduces risk as it allows for a more confident assessment of risk and return.
- b) Scaling Positions: In a similar fashion, it may typically increase the size of its investment in the corporation's obligations over time as it gains a better understanding of the underlying financial condition of the corporation and the manner in which its obligations trade in the market.
- c) Seniority: Once a decision to invest in the corporation has been made, the hedge fund may assess where in the capital structure to invest. Often, although not always, the initial investment will be made in obligations that are relatively senior in a corporation's capital structure because such obligations have stronger covenant protection and a priority claim on assets relative to more junior obligations. Over time, the hedge fund may invest in obligations that are less senior in the capital structure to capture further risk-adjusted returns.
- d) Short Selling: If the opportunity presents itself, the hedge fund may choose to "short" either a company's security as a whole, or "short" securities in one part of a company's capital structure, either as a hedge or as a source of incremental return. It may also enter into "short" sales and derivative transactions in situations where investments are overvalued and have a high probability of declining in value. In addition, it may use derivatives such as credit default swaps as a substitute for actual "long" or "short" positions.

## Credit Risk and Market Risk are Interconnected

Credit hedge fund managers invest in both public and private non-investment grade and non-rated securities, including, leveraged loans, high yield bonds, distressed securities, second lien loans, mezzanine securities and credit derivatives. As seen earlier, these hedge funds seek to identify undervalued securities, based on either earnings or underlying asset value that have been overlooked, or misunderstood by the market.

However, it is important to keep in mind that credit risks and market risks, though often considered separately, are in fact intimately related. This is best seen when considering debt securities such as corporate bonds. For a hold-to-maturity investor, the only risk that really matters is credit risk, i.e. whether or not the issuer defaults at some point in time prior to maturity. However, for any shorter term-oriented investor, or more generally anyone who may sell the corporate bond before maturity, credit risk translates into market risk. Indeed, if after the bond purchase the issuer's credit quality deteriorates, this will be reflected in a decline in the bonds price and an increase in its credit spread. Therefore, a default needn't actually occur. To have a price effect – and therefore market risk – it is enough for the likelihood of a default to changes over time.

Hedge fund trading strategies often go a step further in exploiting the interrelation between credit and market risk. After formally examining fundamental value and market observed pricing interrelationships between credit instruments and equity or equity based options on the same issuer, hedge funds can often arbitrage mispricing. This is illustrated below in two instances: first, convertible securities, second capital structure arbitrage.

### *Example: The case of Convertible Securities*

A convertible security is a bond that may be converted into or exchanged for a specified amount of common stock within a particular period of time at a specified price or formula. A convertible security entitles its

holder to receive interest that is generally paid or accrued on debt or until it matures or is redeemed or converted. They have unique investment characteristics in that they generally

- I. have higher yields than common stocks, but lower yields than comparable non-convertible securities,
- II. are less subject to fluctuation in value than the underlying common stock due to their fixed-income characteristics and
- III. provide the potential for capital appreciation if the market price of the underlying common stock increases.

The value of a convertible security is a function of its "investment value" (determined by its yield in comparison with the yields of other securities of comparable maturity and quality that do not have a conversion privilege) and its "conversion value" (the security's worth, at market value, if converted into the underlying common stock). The investment value of a convertible security is influenced by changes in interest rates, with investment value declining as interest rates increase and increasing as interest rates decline. The credit standing of the issuer and other factors may also have an effect on the convertible security's investment value.

The conversion value of a convertible security is determined by the market price of the underlying common stock. If the conversion value is low relative to the investment value, the price of the convertible security is governed principally by its investment value. To the extent the market price of the underlying common stock approaches or exceeds the conversion price, the price of the convertible security will be increasingly influenced by its conversion value. A convertible security generally will sell at a premium over its conversion value by the extent to which investors place value on the right to acquire the underlying common stock while holding a fixed-income security. Generally, the amount of the premium decreases as the convertible security approaches maturity.

- Hedge fund managers, who understand the credit and market risk components of a convertible security, are able to arbitrage temporary mispricing.

*Example: The case of Capital Structure Arbitrage*

Yet another example of how credit risk and market risk interact is in a strategy called ‘Capital Structure Arbitrage’. The success of this strategy depends on the ability of a hedge fund manager to identify and exploit the relationships between movements in different securities and instruments within an issuer's capital structure (e.g., bank debt, convertible and non-convertible senior and subordinated debt and preferred and common stock). Naturally this strategy is not devoid of loss potential – of course, identification and exploitation of these opportunities involves uncertainty. In the event that the perceived pricing inefficiencies underlying an issuer's securities were to fail to materialize, as expected by a hedge fund manager, the trade breaks down and such funds incur loss.

- Once again, hedge fund managers, who understand the credit and market risk components of a firm's capital structure, are able to arbitrage temporary mispricing.

### General Trading Techniques

As highlighted earlier in Part 1 of this series, there are three primary benefits of including hedge funds in portfolios:

- Diversification – low correlations with traditional asset classes may result in improved portfolio stability.
- Tailored portfolios – an ability to be tailored to meet the investor's needs, thereby delivering very specific risk/return tradeoffs.

- Market access – offer the potential to more efficiently access certain markets and asset classes.

These advantages accrue in part due to the flexible trading techniques employed by hedge funds. Popular techniques employed include leveraging, “short” selling, hedging and arbitrage.

### Leveraging

This involves borrowing money to increase the effective size of the portfolio, or purchasing securities on margin, or synthetically gaining exposure through futures or options contracts. For traditional mutual funds, leverage is generally not allowed or is limited. But hedge fund returns often rely heavily on leverage. During periods in which the fund's portfolio is leveraged, fluctuations in the market value of the portfolio will have a significant effect in relation to an investor's capital. When the return of the underlying asset is higher than the borrowing rate, leverage offers a much higher return than the underlying asset. But leverage also amplifies the risk of the hedge fund. When the return of the underlying asset is lower than the borrowing rate, investors suffer a loss on the leveraged position. Moreover, losses in the underlying asset are amplified with leverage.

The optimal use of leverage in the portfolio is usually a function of the market conditions that the fund is experiencing. In trending markets, a hedge fund manager that picks the right market direction will see returns enhanced by leverage, while losses will be amplified if the market direction is chosen incorrectly. What is often less well understood is that in sideways markets, leverage will actually reduce returns relative to a comparable unleveraged strategy. Hedge fund managers are therefore more likely to rely on leverage if they believe they have spotted an emerging market trend.



## Short Selling

Short selling involves the sale of a security not owned by the seller; a technique used to take advantage of an anticipated price decline. To execute a “short” sale, the seller borrows securities from a third party in order to make delivery to the purchaser. After some time, the seller returns the borrowed securities to the lender by purchasing the securities in the open market. If, at this later date, the seller can buy that security back at a lower price, a profit results. If the price rises, however, a loss results. It is an inherently risky strategy since the most one can make is the amount received when the securities are sold “short”, yet the loss potential is unlimited. But in hedge funds, a “short” position is sometimes used to reduce the risk of “long” position with similar underlying assets. So for hedge funds, “short” selling can be used as a hedging technique rather than just something for speculation (see below).

Short selling, when used effectively, directly and reliably, reduces risk when added to a net ‘long’ stock portfolio. An investment manager ‘shorts’ a stock when he or she believes the stock price will decline or to hedge a long position. A short position has the inverse return characteristics of a long stock position, i.e., the two are negatively correlated, which makes shorting an excellent portfolio risk reduction tool, as well as a potential source of investment profit.

## Hedging

Hedging is essentially a defensive strategy to mitigate the risk of loss to capital. Hedging can be likened to purchasing insurance against the likelihood of an unfavorable event. Depending on the type of risk exposure created by the investment strategy, different types of risk must be hedged, for example currency risk, interest rate risk, political risk, market risk, company risk. For each type of risk, certain hedging techniques and instruments are appropriate. Portfolios tend to be hedged both through systematic or market hedges (typically S&P 500 puts or short positions in exchange-traded funds) and through direct hedges. These hedges can be sector hedges (shorting a basket

of comparable company securities) or more direct pair trades (shorting an overvalued comparable company). Hedge fund managers also use options to limit potential downside in a trade.

Hedging against a decline in the value of a portfolio position does not eliminate fluctuations in the values of portfolio positions or prevent losses if the values of such positions decline. However, it establishes other positions designed to gain from those same developments, thus, moderating the decline in the combined portfolio positions’ value. The talented manager is the one who properly analyzes risk and takes positions most efficiently. Hedge funds monitor gross and net exposures, industry concentration, exposure to large capitalization and small/medium capitalization companies, liquidity of individual positions and of the overall portfolio and individual and portfolio level valuations on a regular basis to control risk exposure to any one factor.

How the position is established depends on how the security trades (i.e., a position in a large, liquid security may be fully established immediately). The timing of a position may also depend on how the event series unfolds, with positions added to or reduced depending on how the underlying event develops. Positions tend to be closely monitored with particular emphasis on the impact of subsequent information on trades. Positions are typically closed out in one of two ways: the event in question occurs, triggering a sell or self-liquidating the trade. Alternatively, the risk and reward parameters of the trade change such that the fund manager may change his/her view and no longer want to own the position. Many a time these positions are inherently hedged (e.g., risk arbitrage convergence trades) while at other times positions may be hedged via market hedging techniques, such as hedging a ‘long’ equity market position by using S&P puts.

In summary, hedge funds often utilize financial instruments and derivatives, both for investment purposes and for risk management purposes in order to:

- I. protect against possible changes in the market value of their investment portfolios resulting from fluctuations in the securities markets and changes in interest rates;
- II. protect unrealized gains in their investment portfolio;
- III. facilitate the sale of investments;
- IV. enhance or preserve returns, spreads or gains on any investment in the portfolio;
- V. hedge the interest rate or currency exchange rate on liabilities or assets; or
- VI. protect against any increase in the price of securities they anticipate purchasing at a later date.

The success of a fund's hedging strategy will depend upon the ability to correctly assess the degree of correlation between the performance of the instruments used in the hedging strategy and the performance of the portfolio investments being hedged. Since the characteristics of many securities change, as markets change or time passes, the success of a hedge will be subject to the ability to continually recalculate, readjust and execute hedges in an efficient and timely manner.

### Arbitrage

Arbitrage strategies attempt to exploit temporary price inefficiencies or discrepancies between securities or markets. The hedge fund manager uses historical relationships between instruments in different markets to predict future trends or movements in price. An example from risk arbitrage is the purchase of equity instruments from a company that is to be acquired by another, and offsetting this with a "short" sale of the equity instruments of the acquiring company. Hedge fund managers do not just borrow publicly listed stocks; they make use of all kinds of financial instruments. The revolution in financial engineering over the last two decades has generated a wide range

of trading tools that they can use to participate in arbitrage opportunities. The range of financial instruments includes exchange traded fixed income and equity instruments, as well as commodity derivatives, fixed income OTC derivatives, credit derivatives, structured and hybrid instruments.

Arbitrage opportunities are generally not 'riskless arbitrage', as the term may suggest – i.e. purchasing something at one price and simultaneously selling that at a higher price, generating a profit on the difference. Often, since the underlying assets are related but not exactly the same, generating residue risk which can have an impact on returns.

### Conclusion

Hedge funds are defined both by their investment technique (i.e., use of shorting, leverage, and derivatives) to arbitrage credit and market risks as well as their unique structure (i.e., largely unregulated limited partnerships). Many investors in hedge funds have been rewarded in the past and have the potential to continue to see positive performance provided they are invested with the right managers and in the right trading strategies. These trading strategies are a combination of informed or speculative trades on credit risk and market risk inherent in any financial instrument. Understanding the concepts behind credit risk and market risk is the foundation to understand hedge fund trading strategies, the inherent sources of risks in those strategies and in the manner hedge funds unlock value in trades.

## Note on Investor Suitability

**Equity Risk:** The value of investments in equity securities will fluctuate in response to general economic conditions and to changes in the prospects of particular companies and/or sectors in the economy.

**Small Cap Risk:** The value of the portfolio will fluctuate based on the value of the underlying securities. Small-cap stocks may be subject to a higher degree of risk than more established companies' securities, including higher volatility.

**International Risk:** The value of the portfolio will fluctuate based on the value of the underlying securities. Foreign investing involves risks, including risks related to foreign currency, limited liquidity, less government regulation and the possibility of substantial volatility due to adverse political, economic or other developments.

**Fixed income:** The value of the portfolio will fluctuate based on the value of the underlying securities. Two main risks related to fixed income investing are interest rate risk and credit risk. Typically, when interest rates rise, there is a corresponding decline in the market value of bonds. Credit risk refers to the possibility that the issuer of the bond will not be able to make principal and interest payments.

**Mortgage-backed securities:** Mortgage-backed securities are subject to prepayment risk and may be sensitive to changes in prevailing interest rates. When interest rates rise, the value of fixed income securities generally declines.

**Collateralized mortgage obligation (CMO):** CMO's yield and average life will fluctuate depending of the actual rate at which mortgage holders prepay the mortgages underlying the CMO and changes in current interest rates.

**High-Yield Securities Risk:** High-yield securities carry a high degree of risk. High-yield bonds (also known as "junk bonds") are subject to greater loss of principal and interest, including default risk, than investment grade bonds. Therefore, their prices may be more volatile. Bonds rated 'BB' (lower medium grade); 'B' (low grade), 'CCC' (poor quality), 'CC' (most speculative) and 'D' (default) are regarded as having significant speculative characteristics.

**Municipal Securities Risk:** This strategy invests in municipal securities. Municipal securities are subject to the risk that legislative changes and local and business developments may adversely affect the yield or value of the strategy's investments in such securities. An investment in any municipal portfolio should be made with an understanding of the risks involved in investing in municipal bonds, such as interest rate risk, credit risk and market risk, including the possible loss of principal. The value of the portfolio will fluctuate based on the value of the underlying securities. Clients should contact their tax advisor regarding the suitability of tax-exempt investments in their portfolio. If sold prior to maturity, municipal securities are subject to gain/losses based on the level of interest rates, market conditions and the credit quality of the issuer. Income may be subject to the alternative minimum tax (AMT) and/or state and local taxes, based on state of residence.

**Preferred Securities Risk:** There are special risks associated with an investment in preferred securities, including credit risk, interest rate fluctuations, US Government sponsored securities risk, sector concentration risk and real estate securities risk.

**Alternative Investment Funds Risk Disclosure**

Interests of Alternative Investment Funds (the "Funds") are sold only to qualified investors, and only by means of offering documents that include information about the risks, performance and expenses of the Funds, and which Clients are urged to read carefully before subscribing and retain. This communication is confidential, is intended solely for the information of the person to whom it has been delivered, and should not be reproduced or otherwise distributed, in whole or in part, to third parties. This is not an offer to sell any interests of any Fund, and is not a solicitation of an offer to purchase them. An investment in a Fund is speculative and involves significant risks. The Funds are not mutual funds and are not subject to the same regulatory requirements as mutual funds. The Funds' performance may be volatile, and investors may lose all or a substantial amount of their investment in a Fund. The Funds may engage in leveraging and other speculative investment practices that may increase the risk of investment loss. Interests of the Funds typically will be illiquid and subject to restrictions on transfer. The Funds may not be required to provide periodic pricing or valuation information to investors. Fund investment programs generally involve complex tax strategies and there may be delays in distributing tax information to investors. The Funds are subject to high fees, including management fees and other fees and expenses, all of which will reduce profits. The Funds may fluctuate in value. An investment in the Funds is long-term, there is generally no secondary market for the interests of the Fund, and none is expected to develop. Interests in the Funds are not deposits or obligations of, or guaranteed or endorsed by, any bank or other insured depository institution, and are not federally insured by the Federal Deposit Insurance Corporation, the Federal Reserve Board, or any other governmental agency. Prospective investors should understand these risks and have the financial ability and willingness to accept them for an extended period of time before making an investment in a Fund. Investors should consider a Fund as a supplement to an overall investment program. In addition to the risks that apply to alternative investments generally, there are risks specifically associated with investing in hedge funds, which may include those associated with investing in short sales, options, small-cap stocks, "junk bonds," derivatives, distressed securities, non-U.S. securities and illiquid investments.

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