
**SECURITIZATION & HEDGE FUNDS:
CREATING A MORE EFFICIENT
MARKET**

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Intangis Funds

AUGUST 6, 2002

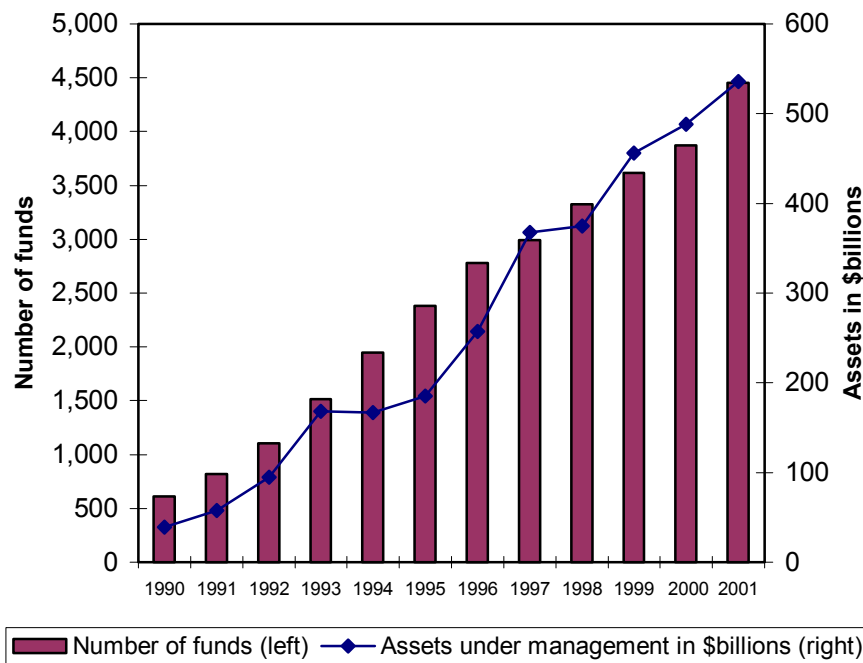
TABLE OF CONTENTS

INTRODUCTION 3
PROBLEM..... 4
SOLUTION..... 5
SECURITIZATION 5
CASH-FLOW TRANSACTIONS..... 6
MARKET VALUE TRANSACTIONS..... 8
ARBITRAGE..... 8
FINANCIAL ENGINEERING..... 8
TRANSPARENCY..... 9
LIQUIDITY 10
SUMMARY..... 10

INTRODUCTION

The hedge fund industry has grown tremendously throughout the 1990s. From 1990 to 1998, assets under management increased from \$20 billion to \$400 billion with the number of hedge funds increasing from 200 to over 6,000. Hedge funds can provide value to high net worth individuals with a high absolute return. However, hedge funds can provide even more value (diversification) to institutional investors as an alternative asset class with lower correlations to other asset classes. Recent research by Kat (2002) has substantiated the value enhancing benefits of hedge funds for institutional investors over high net worth individuals. Within the hedge fund industry there are many different strategies including fixed income arbitrage, equity market neutral, convertible arbitrage, merger arbitrage, distressed securities, event-driven, macro, sector, equity hedge, emerging market and short selling. Each strategy has its own risk and return profile. Additionally, each fund has its own lock-up period and minimum initial investment.

Figure 1 Hedge Fund Market Size



Source: Hedge Fund Research

To optimize a limited capital investment and capture the performance from the entire hedge fund industry from a better risk-return perspective, fund of funds are the optimal investment vehicle. Although the hedge fund industry has made tremendous steps towards obtaining capital from high net worth individuals, sophisticated institutional investors with large asset allocations will be an ever increasing important contributor of hedge fund capital.

PROBLEM

Although the hedge fund industry growth has been predominantly driven by high net worth individuals, private foundations and endowments, more institutional investors are finding this asset class attractive and portfolio enhancing. The future driver of hedge fund growth will be other institutional investors such as insurance companies, various pension funds, and banking institutions. Many institutional investors lack the investment mandate to gain exposure in alternative assets and below investment grade fixed income securities. Beyond legal restrictions (i.e. ERISA), institutional investors demand liquidity and transparency in their investments based on their fiduciary duty to act in accordance with the prudent investor rule that most institutional managers are governed by. Concurrently, institutional investors seek capital preservation, enhanced risk-return opportunities and diversification benefits (i.e. low correlations). For a sophisticated investor, generating high absolute returns provides zero value if risk is increased commensurately. Any investor can achieve high returns by picking risky securities, but to generate more alpha (risk-adjusted returns) is extremely valuable for institutional investors. Therein lies the rift between hedge funds and traditional institutional investors.

Hedge funds customarily lack both transparency, based on their proprietary investment strategies, and liquidity, based on their lock-in periods; however, hedge funds provide precisely what institutional investment managers' portfolio objectives demand, capital preservation, higher alphas, and lower correlations. Furthermore, with the current financial markets in turmoil, all the value enhancing synergies that hedge funds provide to a diversified portfolio become increasingly important.

As unregulated investment partnerships, hedge funds have the financial flexibility and economic incentives to create innovative investment strategies which maximize risk-return tradeoffs. Additionally, research by Hsieh has documented that hedge funds are able to furnish diversification benefits not based on the specific assets invested in but rather how the assets are invested in. The ability to short securities (idiosyncratic risk) and the market (systematic risk) and use derivatives to hedge away undesired risk is extremely value enhancing, especially in a market decline when other asset classes are falling.

By mitigating liquidity and transparency issues between hedge funds and investors, capital flows will improve; however, understanding how the needs differ between both parties will create a more complementary solution.

Liquidity is a problem for investors due in part to the investment styles of hedge funds. For instance, a spread arbitrage would fail, if investors withdrew funds prior to the contraction and during a margin call. Likewise, distressed debt investments require substantial time for returns to materialize given the slow nature of the bankruptcy process. Conversely, the same bankruptcy process also creates inefficiencies in the market and the subsequent premiums for investors. Liquidity could easily be resolved by creating a secondary OTC market for tradable hedge fund securities.

Transparency is another issue hindering institutional investors from allocating more capital to alternative investments. However, it is very important to understand what investors need in terms of transparency. Although hedge funds may not want to divulge their positions and trading strategies, investors are only concerned with having access to information to understand, evaluate and verify the risk-adjusted performance of their investments. This is essential and an underlying principle of the prudent investor rule.

Having knowledge of the positions and trades is meaningless without substantial analysis. A comprehensive analysis of the fund's positions and trades by an independent and credible third party will ultimately result in a matrix of risk-return parameters. The investors only need verification that the hedge fund is performing within its investment mandate, such as leverage ratio, Sortino/Sharpe/Treynor ratio, net asset value (NAV), number of positions and concentration (diversification), Beta, alpha, tracking error, industry exposures, long-short ratio, VAR, volatility, skewness, kurtosis and etc. If this information was accumulated and reported by a credible and objective third party, the asymmetric information chasm between institutional investors and hedge funds would be reduced.

SOLUTION

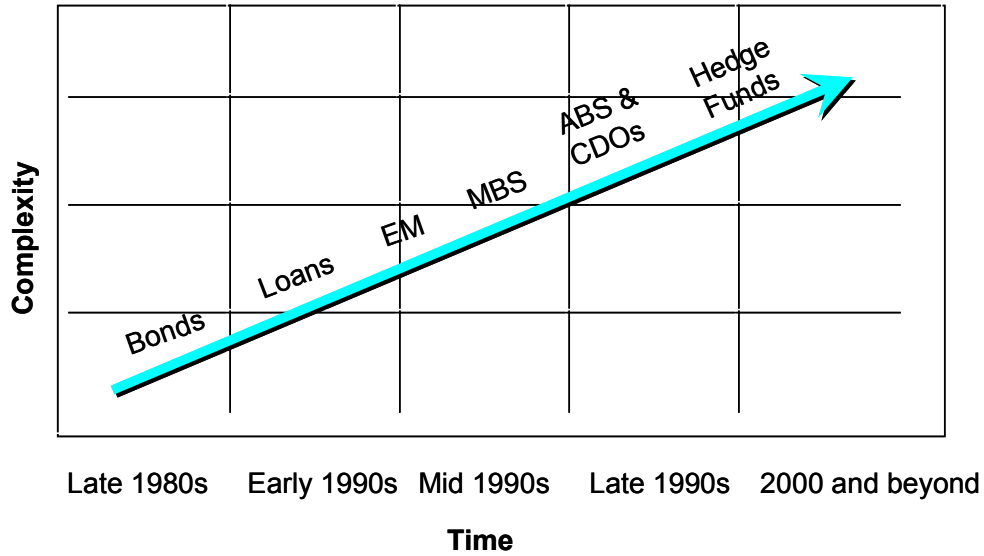
In order to increase capital flows from institutional investors to hedge funds, more financial infrastructure needs to be developed to increase transparency, liquidity and offer more appealing risk-return tradeoffs of investors. Financial engineering can create the necessary market infrastructure to reduce the inefficiencies in the market thus creating a more complete and efficient financial market. Allocating scarce resources efficiently between capital providers creates value in the financial markets. Disintermediation parses the total risk-return properties of a security into individual components that fulfill individual investors' risk-return preferences, thus creating a more complete financial market. Although certain risk-return profiles may be achieved through various combinations of financial derivatives, there may still be differences which can create value within an overall asset allocation problem. For instance, if the hedge fund industry could create similar risk-return securities as other asset classes, value would be created within a diversified portfolio through the low correlation of hedge fund securities. Taking this concept one step further, how can a hedge fund create value through financial innovations that give better risk-return tradeoffs with a lower correlation to other asset classes?

SECURITIZATION

Securitization creates the basic infrastructure for a more efficient financial market. More liquidity will result from a developed secondary market of hedge fund securities, bypassing the traditional lock-up period for hedge fund investments. Transparency will be improved by the process of securitization through the rating and monitoring of tranches by S&P, Moodys and Fitch.

Securitization has resulted in a rapidly expanding market for new financial products that create value for investors, investment bankers, rating agencies, lawyers and issuers. The collateralized debt obligation (CDO) market is the fastest growing segment of all asset-backed securities. The majority of CDOs, which include CLOs, CBOs, CLNs are cash-flow arbitrage/balance sheet transactions; however, market value transactions are developing. The newest CDO innovation is a collateralized fund obligation (CFO) issued by Diversified Strategies CFO S.A., which involves the first collateralization of a fund of hedge funds. J.P Morgan Chase anticipates underwriting \$2B to \$3B CFOs this year

Figure 2 Evolution of the CDO Market



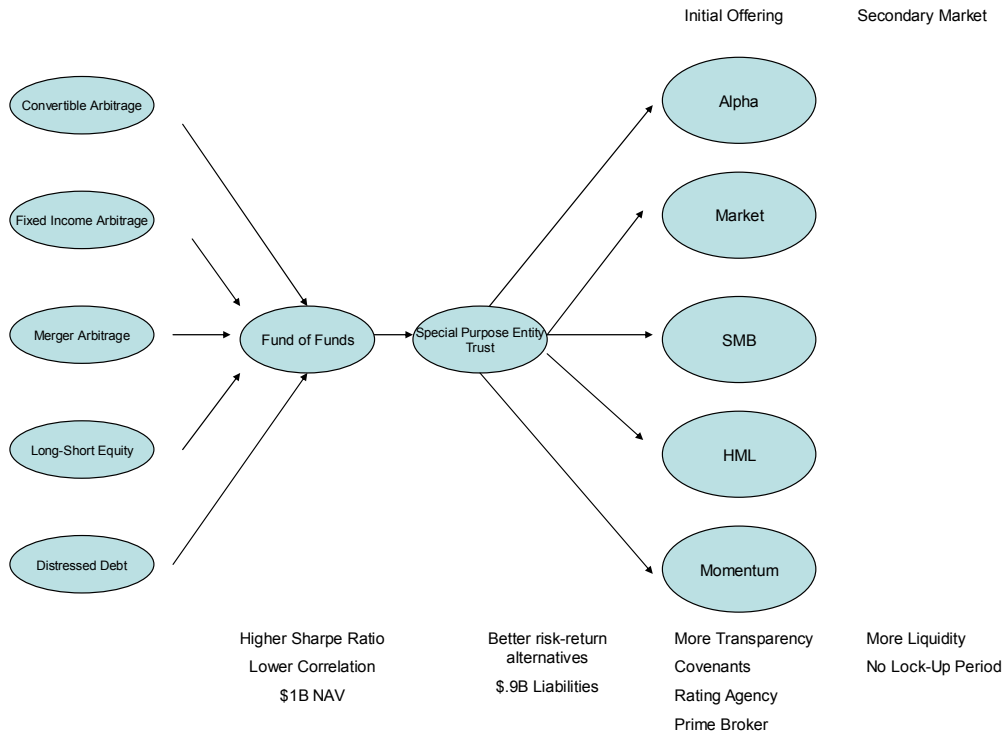
Source: Fitch Ratings

Typically, a collateralization involves the pooling of assets together by an issuer, who later sells the pool to a trust/special purpose entity (SPE). The SPE then tranches the assets into different risk-return tradeoffs that will appeal to a more diversified set of investors who would not otherwise be interested in the original asset. Although securitization itself creates a more efficient and complete market, efficiency can be further improved through a better parsing of risk-return tradeoffs that would appeal to a larger base of investors who would be willing to pay for such risk-return tradeoffs. Additionally, through the creation of newer complex financial securities, more arbitrage opportunities will be discovered and extracted as the market develops better pricing models and compresses spreads on trades.

CASH-FLOW TRANSACTIONS

CDOs can either be cash-flow transactions or market value transactions. From a cash-flow perspective, different tranches can reflect different risk-return factors (i.e. principal only and interest only), and not necessarily the decomposition and recomposition of total asset risk (subordination). Chart 1 provides a graphical representation of how a CFO cash-flow transaction could be structured. Beginning with a pool of individual hedge funds, returns are generated which flow into a pool managed by a fund of funds manager. The total compilation of hedge funds, with different correlations results in a diversified portfolio with better risk-return (Sharpe ratio) properties. Any risk-return component of this fund will have a lower correlation to other asset classes, not based on the **exposure** to specific asset classes but rather **how** the hedge funds invest in these asset classes (i.e. long-short). As the returns materialize from the fund of funds, the SPE distributes the cash flows to investors based on various tranches which are designed to give investors exposure to preferred risk components.

Chart 1:
Cash Flow Transaction



For example, assume the fund of funds earns a 10% return over a six month period. After performing a portfolio attribution analysis, the fund manager can determine which risk factors contributed to the 10% return and subsequently allocate the returns and cash flows to each risk factor or tranche accordingly. If a Fama-French Three Factor Model is used, returns would come from the market, SMB (size), HML (book value) and alpha. If an investor wanted a long exposure to small caps but no exposure to high book value, the investor could simply invest in the SMB tranche. Through this tranche, the investor would be exposed to the small cap market with the correlation of an alternative asset class rather than a domestic equity class (i.e. Russell 2000). Furthermore, the total fund returns could be decomposed into any risk factor desired by investors, such as leverage, earnings/price, dividend yield, momentum effect, yield curve, corporate bond spreads, country spreads and macro economic variables. Essentially any measurable risk factor could be used within the performance attribution analysis with the resulting contribution by the risk factor determining the cash flow associated with each tranche. Within the prospectus, a regression model would dictate how the performance attribution analysis would be consummated so that investors could estimate the market value of each tranche. In our example, we would use the following:

$$R_{Pt} - R_{Ft} = \text{Alpha}_p + B_{P1}(R_{Mt} - R_{Ft}) + B_{P2}\text{SMB}_t + B_{P3}\text{HML}_t + \text{Error}_{Pt}$$

Alternatively, an extended multi-factor model proposed by Capocci (2001) uses eleven factors related to different hedge fund strategies to allocate returns. Regardless of what risk factors are used, the funds' total return can be decomposed into any number of tranches, thus giving investors more risk-return alternatives. As a result, customized risk factors that are typically interlocked with the total risk-return properties of a financial security, could be parsed out and offered at a **premium** to investors willing to pay for it. Traditional hedge fund investors could hedge away specific risk factors

associated only with the hedge fund industry if a secondary market existed for such specialized financial securities.

MARKET VALUE TRANSACTIONS

CFOs are generally tranced into rated and unrated classes which determine the priority of interest in the cash flows generated by the collateral. S&P, Moodys and Fitch generally evaluate the risk of the entire offering and each tranche prior to issuing ratings from AAA in the senior tranche to unrated in the equity/residual tranche. Additionally, credit enhancements such as excess spreads, overcollateralization, structural triggers, reserve accounts and insurance wraps can be included to enhance the ratings within each tranche. Through tranching, the total risk of the fund is redistributed from the senior tranches to the lower tranches. Theoretically, the AAA tranche would demand a yield comparable to an AAA CDO with a premium. For an institutional investor allocating capital among a diversified set of asset classes, the lower correlation benefit from an alternative asset class would be valuable whereas a high net worth individual without an asset allocation problem would not.

ARBITRAGE

By redistributing the risk (leverage) between the different tranches, each tranche has a different sensitivity to the market. Imagine the fund's sensitivity to the market as equivalent to a beta (or duration) of 1. By increasing the leverage of the equity tranche and subsequently allocating the risk from the senior tranche to the equity tranche, the beta of the senior tranche falls whereas the beta on the equity tranche rises. In this case, as the market rises and falls, the senior tranche will not be affected. As the sensitivity of the equity tranche increases, its return profile grows more convex and mimics that of an option. More specifically, holding the equity tranche is equivalent to buying a call option and selling a put option. Put-call parity dictates that the equity tranche (C-P) equal $(S - Xe^{-rt})$, otherwise, an arbitrage opportunity exists. Likewise, holding the equity tranche and buying an equivalent put option will create arbitrage opportunities if a call option on the underlying CFO is valued differently.

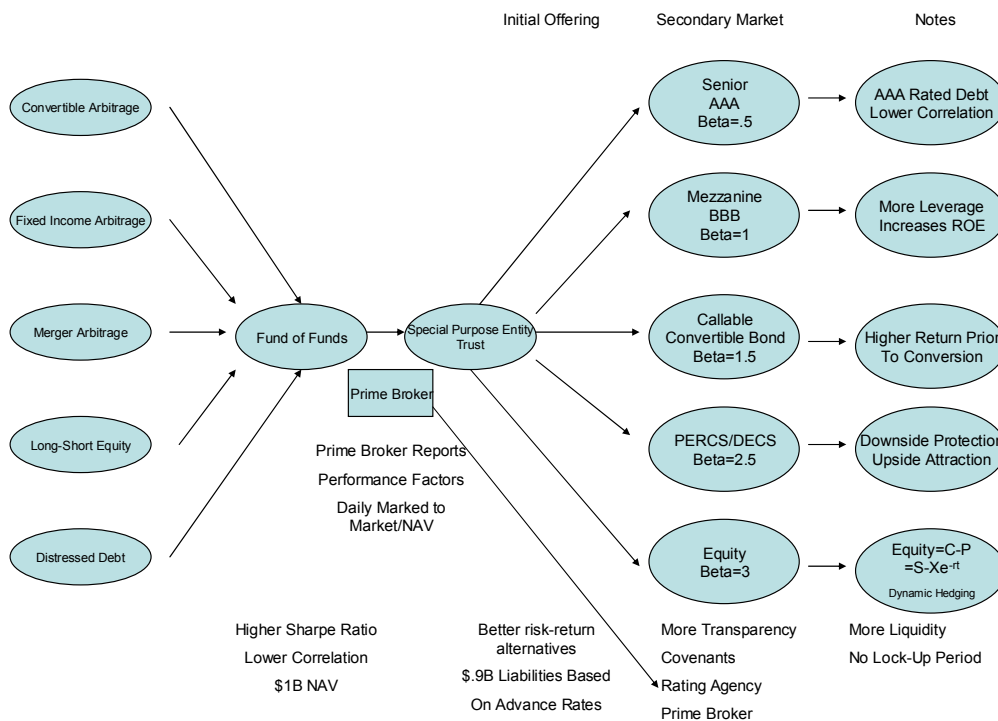
Furthermore, as an investor of higher risk equity tranches, the investor can dynamically hedge away the risk, thus increasing the risk-return tradeoff of the portfolio. Specifically, each equity tranche will have a theoretical set of five greeks (delta, vega, theta, rho, gamma) which within a diversified portfolio will offset each other, resulting in a set of underlying greeks for the portfolio, which can be dynamically hedged by trading various combinations of options. This is not a simple analysis as the measurement of each greek for each equity tranche is determined by the overall distribution of risk and sensitivities (degree of leverage) for each CFO offering. However, by dynamically hedging a portfolio of equity tranches, returns will be higher than average given the complex nature of the strategy and differences in valuation.

FINANCIAL ENGINEERING

Although CFOs are currently only structured based on a standard senior-subordinated offering, financial innovation can create more attractive risk-return characteristics for each tranche that would appeal to a larger investor base. Chart 2 provides a graphical representation of how a CFO market value transaction could be structured. More specifically, rather than offering a senior AAA tranche and a BBB mezzanine tranche which would yield similar returns to comparably risky debt

instruments, convertible bonds, preference equity redemption cumulative stock (PERCS), and dividend enhanced convertible stock (DECS) could be offered that would give investors a customized exposure into the hedge fund market with more attractive risk-return tradeoffs and higher portfolio Sharpe ratios. For instance, as an institutional investor, capital preservation is extremely important, thus a higher yielding security resulting in lower downside risk would be particularly valuable to a portfolio. PERCS provide both these benefits; however, the upside is capped whereas DECS can provide this upside through the incorporation of an out-of-money call option. The payoff for DECS is similar to an inverse S-shape, where a higher dividend yield diminishes the sensitivity to downside risk by compensating with more income and the out-of-money call option gives the investor an attractive upside above a predetermined level. Through the incorporation of mandatory convertible options, asymmetric information gaps and alignment of investor and fund manager goals are efficiently optimized. Through different combinations of derivatives, the fund can be managed within a given risk-return range. Additionally, if there is uncertainty with a tranche which increases risk and lowers value, by attaching call options, the tranche will increase in value as risk rises.

Chart 2:
Market Value Transaction



TRANSPARENCY

Asset covenants create transparency for investors by dictating the portfolio construction parameters, and transparency is further enhanced through the rating and subsequent monitoring by the different rating agencies. Acknowledging that investors do not necessarily want the actual positions and trades of each hedge fund, but rather the credible net results of the portfolio from a risk-return perspective creates the need for a third-party, such as a prime broker, to report on a continuous basis to the rating agencies, factors such as leverage, degree of diversification, Sortino ratio, Sharpe ratio, Treynor

ratio, tracking error, Beta, NAV (*marked-to-market*) and etc. The rating agencies can subsequently disseminate the information to investors in reports and upgrades/downgrades based on violations of OC tests (NAV X Advance Rates < debt obligations) or covenants.

The portfolio manager would like to access cheap capital so as to earn management fees; however, he is motivated to take on excessive risk as the equity owner. Hence, to align the interests of all parties, covenants, mandatory convertibles and rating agencies all provide value. More specifically, the portfolio limitations combined with monitoring by rating agencies and mandatory convertibles which limit downside risk, will align portfolio managers' interest to maximize total return while minimizing risk (optimizing the risk-return tradeoff). Structuring a CFO requires careful consideration between raising incremental capital (collateral assets supporting higher debt loads) and reducing equity returns.

LIQUIDITY

Securitization creates newer financial securities with different risk-return and correlation properties which investors prefer and would not otherwise be able to acquire. As the CFO market develops, a secondary market may evolve over time, thus creating liquidity for the hedge fund industry. Without a secondary market, traditional lock-up periods with hedge funds hinder the capital flows from investors. Recently, a European hedge fund was created to trade CDOs boosting the liquidity for the European CDO market.

SUMMARY

From an overall capital structure perspective, assuming the fund of funds is the equity holder, the fund is essentially borrowing money to invest. The senior tranche would be analogous to senior debt with each cash flow payment representing an interest payment. The advantage of securitization is that through the process of redistributing risk to those investors most willing to bear it, the overall cost of capital decreases for the fund.

Value is created through the process of securitization by increasing the efficiency and completeness of the financial markets. Further value is created through financial innovations in how each tranche is structured so as to maximize the optimal allocation of scarce capital to investors based on their specific risk-return preferences. The development of the CFO market accomplishes this resource allocation process efficiently and thus increases the capital flows from institutional investors to hedge funds. The CFO infrastructure reduces the current transparency and liquidity issues that hinder this capital flow between investors and fund managers. Finally, a more complete and efficient financial market creates incremental value for all stakeholders.

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