

# An Alternative Future

*An exploration of the role of hedge funds.*

Clifford Asness

One of the main financial market stories of the last three to five years has been the explosive growth of hedge funds. Depending on whom you ask, hedge funds are either the wave of the future, or they are a dangerous fad that has been grossly over-capitalized and all will end in ruin. Both sentiments contain elements of truth. The good news for hedge funds is that a portfolio structure that divides capital between traditional index funds to obtain beta (or market exposure) and hedge funds to earn alpha is very appealing.

Traditional active management attempts to add alpha by adjusting index holdings in an arbitrary, confusing, and constraining manner.<sup>1</sup> It can be viewed as a tie-in sale between an index fund and a very constrained hedge fund. Hedge funds allow for a much clearer separation of the unrelated activities of obtaining index exposure and generating alpha, thus leading to clean portfolio construction, performance attribution, and fee breakdowns. Furthermore, sources of alpha and techniques unavailable in traditional mandates are available in this format.

To fulfill their promise, hedge funds need to recognize and improve on shortcomings. A companion piece to this article explores hedge fund fees in more depth, examines various dark sides to hedge fund investing, and recommends future evolutionary changes needed to help hedge funds achieve their potential (see Asness [2004]).<sup>2</sup>

Given my generally pro-hedge fund slant here, some fair disclosure is in order. I am a hedge fund manager.

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## SIMPLE HEDGED INVESTMENT STRATEGY

A simple definition of a hedge fund investment strategy might go as follows: a strategy that trades relatively liquid assets (versus some other alternatives like private equity and real estate), seeks to make positive average returns over time, and provides diversification versus traditional stock and bond markets. A more quantitative definition might say we want positive expected return with low correlation.

Of course, the trillion dollar question is how to create such an asset. We can start with a simple and familiar example, a traditional, actively managed equity portfolio. This is a collection of stocks, usually a relatively small subset of those in a stock index, that an active manager believes will outperform the others in the index. Define these portfolio weights for the active manager as  $A$  and the weights in the index as  $I$ . The weights that make up  $A$  and  $I$  separately sum to 100%.

We can represent the active manager's holdings  $A$  as:

$$A = I + [A - I] \quad (1)$$

Now what does this say beyond that it is one of the world's simplest equations? Well, it says you can define what the active manager owns in two parts. First, he owns the index, and second he owns a zero investment long-short portfolio that represents his views. Since  $A - I$  is the difference in weights across all stocks between the active portfolio and the index, and since the weights in  $A$  and  $I$  both sum separately to 100%,  $A - I$  is a *zero investment portfolio*. In traditional long-only investment management the expected return to  $A - I$  is usually referred to as the manager's alpha and the volatility of the return to  $A - I$  as the manager's tracking error.<sup>3</sup>

So how do we make a hedge fund? Well, we can make one very simple hedge fund by shorting the index (say, with a futures contract). When the active manager shorts one unit of a futures contract, she subtracts the excess return (over cash) of the index from her portfolio. Let's add the short futures position to Equation (1) and define a new set of weights  $H$ . Note that we can interpret these equations in terms of portfolio weights or in terms of the returns on these portfolios:<sup>4</sup>

$$H = I + [A - I] - [I - \text{CASH}] \quad (2)$$

$$H = \text{CASH} + [A - I]$$

What is this new beast  $H$ ? Well, it is a very simple hedge fund. It will have low to zero correlation with the index  $I$ . It will have a positive expected return if the manager has skill or alpha. Basically, assuming that the original manager is trying to beat the index through stock-picking skill, this new asset  $H$  delivers the return on that skill alone,

separate from the index return.<sup>5</sup>

Why might this new investment  $H$  be interesting? What does it give us beyond what was achievable with simple index funds ( $I$ ) and active management ( $A$ )? Well, first and foremost, it allows us to choose our exposure to the index and the active manager's skill separately.<sup>6</sup>

Say there is an active manager who is quite skillful, but takes relatively limited tracking error from the benchmark. Say, for instance, the volatility of  $I$  is 15% and that of  $A - I$  is 3%. A believer in this manager's skill might want more than a 1:5 ratio versus market risk. If the manager is skillful enough (implausible perhaps to fans of efficient markets, but they are probably not the ones buying active management to begin with), investors might not get enough of this skill with traditional active management.

In fact, one can view traditional active management as a tie-in sale. In this example, you get five units of an index fund for every one unit of active management in the only choice available to you under the traditional structure. Once  $H$  exists, though, investors can choose the ratio of  $H$  and  $I$ .

There is another and more subtle benefit to creating asset  $H$ . It allows for a much easier and more natural analysis of the manager's skill and the fees paid for that skill. When investing in active Portfolio  $A$ , it is quite easy to be imprecise about such things. When investing in some combination of  $I$  and  $H$ , it is hard not to be more precise, as the sole purpose of  $I$  is index exposure, and the sole purpose of  $H$  is exposure to the manager's skill. This decomposition and separation is itself quite clarifying.

Indeed, I argue even a die-hard fan of efficient markets who would not be caught dead owning  $H$  will like this way of thinking. The clarity behind this approach is less likely to allow underperforming stock pickers to be saved by a bull market. In the hedge fund-plus-index fund construct, this underperformance does not show up as making less than the stock market, but rather as  $H$  losing to cash. This tends to be overlooked less often.

Next let's consider leverage  $L$ , and modify Equation (2):

$$H = \text{CASH} + L[A - I] \quad (3)$$

Once a hedge fund manager is shorting the index, he, assuming for simplicity that the cost of borrowing is zero, can rather easily apply leverage to the remaining lower-volatility, pure active bet. Depending on  $L$ , a hedge fund manager's volatility can be equal to, higher than, or lower than the traditional manager's ( $A$ 's) tracking error. Does  $L > 1$  make the hedge fund manager more risky than the active manager?

Well, say  $A$ 's tracking error is 300 basis points (bp), and the hedge fund manager is levered 3:1 as above. In this case, the hedge fund manager's volatility is  $3 \times 300 \text{ bp} = 9\%$ . The index fund's volatility is 15%, and the actively managed

portfolio is very slightly riskier (the square root of 15% squared plus 3% squared). Thus, the acts of selling futures and leveraging clearly do not automatically lead to higher risk.

An interesting question now regards the fair fee for H. Say the traditional active manager charges a 65 bp fixed fee for taking 300 bp of tracking error. What is the fair fee for a hedge fund manager levered 3:1?

Well, the active manager A is delivering a hedge fund plus an index fund. Assume the index fund would cost 5 bp alone. Obviously the cost of A's skill is an extra 60 bp. The hedge fund manager H is delivering 3 times the skill, with no index exposure, so the fee equivalent to A's fee for the hedge fund is 180 bp a year.<sup>7</sup>

While this seems gigantic by conventional standards, it's simply a consistent consequence of the math. Traditional active management is a tie-in sale of a cheap good (an index fund) and an expensive one (manager skill). When you break the tie-in sale and lever up the expensive part, it costs more.

It's very possible that (when viewed this way) the common perception that hedge funds charge far more than traditional active managers is exaggerated. It may remain an open question as to whether certain necessary assumptions hold (such as low-beta hedge funds delivering more active risk per dollar than traditional managers), but the comparison of hedge fund and traditional active management fees is clearly more complex than it seems at first glance when sticker shock can be blinding.

To sum this up, a simple application of financial engineering allows the isolation of skill as a stand-alone investable asset from index exposure. This separation provides three main benefits: 1) It allows investors to choose the allocation between market exposure and skill; 2) it potentially improves the monitoring of risk and performance attribution; and 3) it sheds light on fees.

## MORE COMPLEX HEDGE FUND STRATEGIES

A casual review of the hedge fund world reveals very few that resemble my "long active management, short futures" strategy. This simple strategy captures the essence of hedge fund investing in perhaps as simple a form as possible, but that is its only real virtue.

We need to generalize the ideas behind hedge fund investing, and also understand some of the major categories of hedge funds. They generally all share the goal of making money on average without high correlation with traditional markets, and usually share the characteristics of less constrained investing with the ability to short, lever, or use derivatives to try to meet this goal.

First, staying within the world of individual stocks, and still trying to benefit from stock-picking skills, we can generalize the H construct to include not just shorting of stock-

index futures, but of specific individual stocks. While there are all kinds of variations on the theme, two broad categories of hedge funds that do this are called *market-neutral* and *long-short equity*. Both combine actively chosen long and short positions, with the general idea that if alpha exists in choosing stocks to purchase, it probably also exists in choosing stocks to short, and a superior portfolio can be put together by doing both.<sup>8</sup>

Market-neutral investing is often a quantitative style that seeks to be balanced long and short (equal dollar or more rigorously equal beta), and usually consists of very diverse long and short portfolios. Long-short equity investing generally refers to a less quantitative strategy of stock-picking. Long-short managers often run to a long bias, and will change their net and gross exposure over time. Both strategies, of course, seek to achieve a positive average return with lower or much lower correlations with market indexes than those of traditional long-only stock portfolios.

Other long-short strategies seek to achieve the same goals through different means from individual stock-picking. One is *merger arbitrage*.

When a new merger is announced, typically the target price rises, but typically by less than implied by the full terms of the merger; as the market recognizes some probability the merger will fail. The merger arbitrage hedge fund manager generally goes long the target and short the acquirer, betting that the deal will go through, and the rest of the spread will close for a profit. The risk is that the deal falls through, and the spread widens precipitously. The merger arbitrage manager will obviously profit over the long run if the small gains from many deals going through outweigh the generally larger losses from a much smaller number of deals failing.

Another example is a strategy called *statistical arbitrage*.<sup>9</sup> Some use this term to refer to any quantitative investment strategy. I use the term here to mean a narrower set of short-term contrarian strategies. This strategy, on a very short-term basis (less than a month but down to days or even hours), basically goes long very recent losing stocks and short recent winners. Its practitioners typically try to hedge the long positions with the short positions along a bevy of risk characteristics (e.g., beta, size, or industry). In general they make money when recent winners and losers reverse course.

One interpretation is that these managers are betting that the winners and losers got that way through temporary and uninformed price pressure—that is, somebody big was buying or selling for reasons without particular insight, and they lose when they get on the wrong side of an informed trader.

What is interesting about merger and statistical arbitrage is that both trade individual stocks only, but are very difficult to make relevant within a typical, traditional long-only structure. For instance, simply buying an announced takeover target firm naked without shorting the acquirer is a far less precise bet on the merger succeeding (assuming the merger is stock-for-stock, not a cash deal).<sup>10</sup>

Imagine one computer company is buying another. The merger arbitrageur's bet is just that the deal will occur, although idiosyncratic news on one of the companies can still matter. Just buying the target also bets on the merger occurring, but adds a large bet that the market will reward computer companies over the same time horizon. Essentially, the hedge fund structure allows strategies to become relevant that would otherwise not matter much, as they would be too imprecise and risky.

A generalized form of *fixed-income arbitrage* involves attempting to find a set of bonds to long and short, where the longs and shorts hedge each other somewhat, and the longs are expected to outperform the shorts. Why a hedge fund for this? Well, for many of these strategies, the instruments are not very volatile, and the hedges are very good (i.e., the longs and the shorts move together well).

Leverage can often be required to make this a strategy worth pursuing. Short-selling is obviously required to bet on the relative returns between the longs and the shorts at any material risk level (beyond just underweighting versus an index), and not on the absolute direction of bond markets. For example, a fixed-income arbitrageur might have the opinion that the five-year U.S. Treasury Bond is attractive versus the two-year and ten-year, but no opinion on the direction of bonds in general.

Another strategy that would not make much sense outside the hedge fund structure (if shorting and leverage are not permitted) is called *convertible arbitrage*. Essentially, this strategy buys convertible bonds that can be traded in at some prescribed price for shares of common stock.

An outright purchase of these bonds entails many risks, including exposure to fluctuations in the price of the common stock. Hedge fund managers can remove this risk (or at least try to, as hedging is not always a precise science) by shorting the common stock. While there are many variations, convertible arbitrage managers generally try to profit from finding convertible bonds that are trading too cheaply, and locking in this value with their hedges.<sup>11</sup>

Leverage is often applied, as a diversified portfolio of hedged convertibles is fairly low-risk. Without shorting and leverage, the only way to bet that a convertible is too cheap would be an outright purchase of the bond, clearly a far less precise and more risky way to express such a view. This is another case where the hedge fund construct takes potential sources of return that may be irrelevant with traditional tools and makes them relevant.

Two other major classes of hedge fund strategies are *macro* and *commodity trading advisors* (CTAs). Macro is a very general class that can do anything, but is thought of as looking across borders, making bets on the absolute and relative attractiveness of asset classes, countries (in any asset class), and currencies. Again the hedge fund structure makes something potentially important out of strategies and trades with little allowable impact on traditional portfolios.

Either by constraint, or by specialization of mandate, many cross-country and cross-asset class positions are not common to traditional managers, and some must be pursued through shorting or leverage to matter (e.g., a view that two non-U.S. currencies will move relative to each other with no view on the U.S. dollar usually has little place in traditional portfolios). Like macro managers, CTAs also trade a wide variety of global assets such as equity indexes, government bonds, currencies, and physical commodities through the futures markets. While macro managers are thought of as making medium-to-long-term valuation calls, CTAs are generally thought of as trading on short-to-medium-term trend-following or momentum.

The hedge fund structure overall allows skill to be packaged as a pure investment in a variety of asset classes. It also allows meaningful implementation of certain strategies that may be skill-based, but also might represent fair compensation for undertaking certain risks or providing liquidity (e.g., merger or statistical arbitrage). Without short-selling and leverage, which are typically part of the hedge fund structure, and a generally less constrained environment, much of this would not be possible.

There is a positive effect here not just for hedge fund managers and investors but for financial markets in general. Without merger arbitrageurs, spreads after announced deals would likely remain much wider, putting stockholders of the target company at risk if they want to reap the merger's benefit. Without statistical arbitrage, markets would be less liquid, as a big seller would find fewer willing buyers. Without fixed income arbitrage, strange discontinuities in yield curves, abnormally high prices for risky bonds, and other anomalies would all be larger and last longer, potentially warping real investment decisions. Thus many hedge fund strategies make markets more efficient.

## WHY NOW?

So why are hedge funds gaining such popularity now when these strategies have been around for quite a while?

## Learning

One possibility is that hedge funds are a superior investment structure but this is not a simple thing to ascer-

tain, and we just were not ready to understand it until recently.

Many of these strategies involve much more financial engineering than more typical investments. The development of options exchanges in the 1970s, the birth and development of modern portfolio theory, and numerous technological advancements all were necessary for the acceptance of such strategies to grow.

At one time in history, we would have said: Why mutual funds now? Why money market funds now? Why index funds now?

### A Low Equity Risk Premium

There is a growing belief or acceptance that traditional markets will not provide the risk premiums (returns over riskless assets) going forward that they have in the past. In particular, many investors and researchers believe the equity risk premium in the U.S. going forward will not be what it was historically.

Look at the S&P 500's P/E in the Exhibit. Many authors have shown that when prices are high versus fundamentals, as they are now, expected future real stock market returns are low. One might note that the P/E in the Exhibit is currently far lower than the peak of the bubble in early 2000, but that is damning with faint praise. Current P/Es are very high versus 120 years of history, auguring a lower equity risk-premium going forward.

The generally poorer prospects for traditional equity

markets make the pursuit of a higher Sharpe ratio (expected excess return per unit of volatility) through diversifying strategies more important than it once was. In the past, a very attractive risk premium was available just for going long an equity index fund. This is no longer the case. The bear stock market of 2000–2002 may have reinforced this lesson and stepped up the rush to hedge funds as a needed diversifier, and some institutional investors may also have realized that certain other assets like venture capital and private equity were not the diversifiers they once thought.

### It May be a Fad

Part of the popularity of hedge funds might be faddish. They are generally perceived to be the investment of choice of the rich and the informed, and they are more interesting and fun to discuss than your Vanguard index fund. And, unlike the stock market of 2000–2002, they have not failed for a few years now (1998 is much longer ago than 2002). Fads are difficult to predict or explain, but even the most pro-hedge fund observer would have to admit that a faddish rush accounts for at least some of the recent hedge fund explosion.

### The Hurdle for Portfolio Improvement is Low

Perhaps the most important reason for the newfound popularity of hedge funds, particularly among institutions,

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## EXHIBIT

S&P 500 P/E (price divided by 10-year real earnings)



Sources: Calculated from Shiller website and DataStream.

is the realization of exactly how low a Sharpe ratio is needed from hedge funds to improve, or even radically improve, the risk-adjusted return of a portfolio. If you can find a hedge fund with zero correlation with your current portfolio, and if it has any positive expected return over cash, adding some of it will improve your overall expected results.

While many in the hedge fund world seek or claim to have annual Sharpe ratios of 1.0, 2.0, 3.0, or more, in reality numbers like 0.5, 0.2, and even 0.1 would warrant inclusion in a traditional portfolio. Now, it's a different question as to whether a hedge fund with a 0.1 Sharpe ratio is a viable business. Such a manager will have to deal with being down in very close to half the years, and the time horizon needed to be reasonably certain they provide value is gigantic.

Specifics aside, the general realization among institutions of the low hurdle for including diversifying assets in their portfolio has clearly radically raised demand for hedge funds. While traditional hedge fund investors have for years demanded their hedge funds make money all the time, more modern hedge fund investors are closer to demanding their hedge funds make money a bit more often than they lose, as long as the losing periods are relatively unrelated to the losing periods in traditional markets.

## HEDGE FUND ALPHA VERSUS BETA

The concepts of alpha and beta are familiar from the world of stock-picking. In this traditional investing world, beta is a portfolio's exposure to the stock market; a beta of 1.0 indicates that if the market goes up 10%, the portfolio would be expected to go up 10%. Alpha is a manager's expected return (or often *ex post* their realized return) above or below the return attributable to their beta and that attributable to the risk-free rate.

The typical interpretation of alpha is that of *skill*. If over the long term a portfolio manager has had returns in excess of what you would expect simply observing her beta, we say the manager has demonstrated positive alpha. It is the alpha that the construct *H* in Equation (2) is trying to deliver in a pure form.

Even in traditional markets, the world of one single market beta seems dated. For stock-picking, researchers have generalized the concept of beta to include exposures to other risk factors or styles.

The most famous generalization is the Fama and French [1993, 1996] three-factor model. In this model there are three betas representing 1) systematic exposure to the market (regular old beta), 2) exposure to the excess performance of value stocks over growth stocks, and 3) exposure to the excess performance of small stocks over large stocks. The idea behind the three-factor model is not to credit (or blame) managers for the returns to known strategies available to all. Such exposures are not normally considered skill.

Generalizing outside the stock-picking world, new potential betas arise. Exposure to interest-rate risk and credit risk can both be thought of as systematic exposure. We can easily imagine measuring the alpha of a manager net of her average exposures to all the various betas. If a manager averages, and is always expected to average, long high-yield bonds, we want to know not just if she posts returns above cash, but if she posts returns above what one would expect, given this passive exposure to credit.

The concept of alpha and beta can also be applied to the hedge fund world. Asness [2003], Jensen and Rotenberg [2003], Dunn [2004], and Siegel [2004] make a similar observation. In the long-only world, market beta is something available to all, a known strategy with an explanation of why it should over time deliver positive returns above the risk-free rate. Hedge fund betas are a very similar concept.

Notice above when I discuss strategies such as merger arbitrage, convertible arbitrage, and statistical arbitrage, I am describing a systematic strategy (e.g., "the merger arbitrage manager generally goes long the target and short the acquirer"). I am not stressing manager skill.

Imagine a merger arbitrage strategy that participates in every announced merger. This is not enough to specify a strategy completely. How would we weight each announced merger? When after an announcement does a strategy enter into a position?

Should such ambiguity bother us when we try to define this concept of a hedge fund beta? I argue no. It is inherent in any traditional long-only index fund attempting to deliver the theoretically easy yet practically hard to define "market exposure." In other words, for a traditional index fund do we include 500, 1,000, or 5,000 stocks? Do we have a hard rule like capitalization, or a committee to choose the stocks? When do we add new stocks and replace old ones? Do we use straight market capitalization weighting or some alternative scheme?

Thus, while no two practical implementations of a merger arbitrage beta portfolio will be precisely alike, the only real question is whether such a construct helps us understand hedge fund returns, and represents a real, viable, and potentially important investment choice. The answer to these questions is yes.

Of course, merger arbitrage is only one example. Many other hedge fund strategies are amenable to similar thinking. For instance, it is easy to imagine systematic and easily explainable strategies for convertible arbitrage, statistical arbitrage, and even fixed-income arbitrage.

Precise models will of course vary. I am not claiming the breakdown or classification of any given strategy into beta and alpha represents a clear bright-line test. It is a useful concept, though, to think of any hedge fund manager as a set of exposures to 1) traditional betas (market exposure, value versus growth, small versus large, interest rates, credit) and

2) hedge fund betas (basic merger arbitrage, convertible arbitrage, fixed-income arbitrage). Any skill hedge fund managers have comes on top of these exposures. What both these betas have in common is that they represent a known implementable strategy, and thus a source of potentially common systematic risk.<sup>12</sup>

An interesting and potentially contentious question is whether the expected return to each hedge fund beta is positive. While that is not necessary to make this concept useful (a systematic risk factor that explains why a group of managers go up or down can be useful even if that risk factor is not rewarded on average over time), we generally think of these betas as offering long-term positive results.

For every hedge fund strategy, there is some argument for why it should have an expected positive Sharpe-ratio. In general, like those in the long-only literature, these arguments can fall into the efficient market camp (where investors are rational to insist on being paid to bear some undiversifiable risk) or the inefficient market camp (where a strategy works on average because it capitalizes on known investor biases or structural reasons why some investors will accept lower returns so the hedge fund can reap higher ones).<sup>13</sup>

Again take the example of merger arbitrage. Once a deal is announced, going long the target and short the acquirer has a strange pattern of returns (see Mitchell and Pulvino [2000]). While the average returns have been positive over the long term, individual positions are highly negatively skewed, meaning that when deals fail you lose a lot more than you can gain when they succeed. Furthermore, an entire portfolio of mergers has a positive market exposure, and interestingly a negative coskewness with the market (when the market suffers large declines, the merger arbitrage strategy suffers more than one would guess if all returns were distributed in a normal fashion).

Has merger arbitrage had a positive long-term return because managers rationally demand to be paid for bearing this risk? Or has it been successful because investors irrationally will pay to avoid the chance that an individual deal will blow up? Or, finally, have managers just been lucky for 20 or 30 years?

All these questions are not unique to merger arbitrage or hedge fund betas in general, but rather mirror the arguments over more traditional risk factors such as value versus growth and small versus large.

Now, given a model for traditional and hedge fund betas, we have not eliminated the role of skill. Skill or alpha is simply the return net of these betas (in either an ex ante expected sense or in the noisier realized sense). The betas are exposures to strategies (traditional and hedge fund) that are known, common to many managers (so they explain a lot of common variation) and generally support why managers get paid (have positive expected returns over time). Alpha is what is left over.

To continue using merger arbitrage as an example, imagine again a systematic merger strategy. Now imagine a particular merger arbitrage manager who generally practices this strategy, but invests in only a subset of the available deals, at weights of his own choosing, and at a degree of leverage that varies through time. This manager's returns versus the basic merger arbitrage strategy over time would be a measure of his alpha.

Interestingly, it is reasonable that conclusions may change over time. Thirty years ago merger arbitrage was pursued by many fewer managers than today. Thus the strategy in all likelihood delivered a much higher risk-adjusted return then, as spreads were much wider with less capital invested.<sup>14</sup> So, back then, was basic merger arbitrage an alpha or a beta?

Well, there is a strong argument it was an alpha (and the first person to notice it would be offended if I called it beta). It was not a widely known strategy, and it delivered very attractive risk-adjusted returns.

In fact, one way to think of the alpha versus beta question is what we want to credit managers for as skill. Thirty years ago, simply noticing and then implementing merger arbitrage would seem to deserve tremendous credit, and recognizing its attractiveness deserved to be called skill. Nowadays, it seems far more likely that, in its simple form, it is a beta. More generally, over time alpha can turn into beta.

This last example brings us to another potential insight. Do these alphas and betas last forever? Well, it is hard to argue that, in a relentlessly competitive market, true alpha can last forever. In that sense, beta, while certainly less glamorous, has something going for it. If beta is rewarded with a positive but modest expected return because in a rational market it represents a risk some investors will pay others to bear for them, or liquidity some investors are willing to pay others to provide, it can last forever.

So, stepping back, why is this split into alpha and beta useful? Well, first, it demands that we answer the question: "Why does this strategy make money?" Second, it has direct implications for portfolio construction and correlation. That is, if you do not realize that your collection of hedge fund managers is largely about a similar beta exposure, it is easy to underestimate how the funds will move together in a crisis. Third, it helps in understanding hedge fund fees. What you should pay for real alpha is different from what you should pay for hedge fund beta, which in turn is different from what you should pay for traditional beta. Asness [2004] explores the issue of fees in more depth.

## CONCLUSION

Allocating to hedge funds will not solve the problem that there is a low equity-risk premium, or that bonds offer low real interest rates, and certainly not that cash rates are infinitesimal. The hedge fund structure does not create

investing skill out of thin air, where other traditional structures have failed to do so, and the tools that hedge funds use (leverage, short-selling and derivatives) certainly come with risk.

That said, the potential benefits of hedge fund investing are real. To the extent investing skill exists, the hedge fund structure allows that skill to be offered alone without the tie-in sale of a traditional index fund. In addition, skill applied in an unconstrained hedge fund structure can produce a better outcome than more constrained traditional formats. The hedge fund structure can serve to clarify risk, performance attribution, and what you're paying for versus traditional active management. Hedge funds can also work to make the market more efficient by aligning prices better with reality.

Hedge funds also, through a set of reasonably well-defined systematic strategies (hedge fund betas), allow liquidity to be provided to those who need it from those who have it, and risk to be transferred from those who do not want it to those who do. Many of these strategies would not be possible without the tools of leverage, short-selling, and derivatives common to hedge funds.

However, the story is not over as all is not wine and roses in the hedge fund world. In Asness [2004] I will explore some dark sides to hedge fund investing that must be addressed, and some less dramatic but important evolutionary changes that are needed for hedge funds to fully fulfill the potential I have outlined here.

## ENDNOTES

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<sup>1</sup>For instance, see Clarke, de Silva, and Thorley [2002].

<sup>2</sup>Space constraints did not permit addressing all these issues in one article. Readers who wish to avoid becoming too elated or too depressed about hedge funds should probably read them at one time and in sequence.

<sup>3</sup>For simplicity assume the risk exposures are the same for the manager and the index.

<sup>4</sup>See Asness [1998] for more details on this approach.

<sup>5</sup>This analysis assumes that market risk is the only priced risk factor (i.e., a CAPM type world). I am not arguing this is the case,

but it suffices for this example. When recombined with an index (often a different one from the original I) this type of pure skill is often called portable alpha.

<sup>6</sup>More generally, Roll [1992] shows that the traditional method, first deciding on a set of index exposures, and then having a set of active managers maximize risk-adjusted return versus the benchmark, does not generally lead to a mean-variance optimal outcome.

<sup>7</sup>Hedge funds traditionally charge a combination of fixed and performance fees, typically 1% fixed and 20% of some definition of the hedge fund's profits.

<sup>8</sup>Sometimes *active* is taken not as the opposite of *passive*, but also to mean a judgment style as contrasted with a quantitative one. What I mean by *active* is an attempt to add value. I have known some quants who are quite frenetic.

<sup>9</sup>Quite the oxymoron: random riskless profit. The other name for merger arbitrage is risk arbitrage, which translated literally means "risky riskless profit," not much better.

<sup>10</sup>The traditional active manager can participate in a stock-for-stock merger only by not owning the acquirer (so she is underweight the acquirer versus her benchmark) and buying the target. This is, a very limited form of betting on the merger that is likely meaningful only when the acquirer is a large company, so the underweight from not owning it is significant.

<sup>11</sup>A convertible bond can be cheap for a variety of reasons. Credit and the implied volatility of the option are the two most likely candidates.

<sup>12</sup>Note one potentially confusing point. Calling systematic hedge fund strategies "beta," and distinguishing this from true alpha, does not mean these hedge fund betas are not value-added propositions. Adding hedge fund beta to traditional portfolios in all likelihood increases their Sharpe ratios, and hedge fund beta requires a far greater variety of skills to implement than do traditional index funds. This itself might be a working definition of alpha in a different sense.

<sup>13</sup>Structural reasons might include common institutional investor guidelines that starve one area of the market for capital, like ratings or maturity constraints on short-selling, the presence of non-economic actors in some markets (e.g., central banks), and many others. Biases include things like the home bias (the fact that many investors overweight assets that are familiar to them), herding behavior (wanting to do what the crowd does), overextrapolation (assuming what's been happening will keep happening), and general myopia (too much of a focus on the short term).

<sup>14</sup>Large-scale mergers were also a relatively new phenomenon starting in the 1960s, raising the possibility that ex ante managers at the time thought this strategy was much more volatile and its Sharpe ratio lower (meaning they did not think it was a great alpha strategy, as it was later shown to be).

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