

# The Tao of Alpha

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*Alpha has somehow achieved cult status in the hedge fund industry. That only a few understand the concept's intricacies is both cause and symptom of this phenomenon. Alpha's precise definition, its short supply, the impediments to finding it, and its real utility are not well understood. This article presents an intuitive explanation of what alpha really is.*

## The Global Alpha Shortage

Even the least sophisticated of investors understand that alpha is something to be pursued. Alpha is good. And more alpha is better. Not surprisingly then, most marketing documents are laced with the word. It slips easily off the tongue of marketers and managers. It appears in conference titles, as in "Portable Alpha Asia 2005" or "Tapping into Alpha". It can be found in the actual fund names, like "Alpha Simplex", "Alpha Partners", and "Absolute Alpha". A particular group in New York, realizing more is better, called their company "Double Alpha".

The irony here is that many an investor and a fair few hedge fund professionals only have a vague understanding of what alpha really is let alone the important principles that underlie it. Alpha is not a synonym for high or consistent returns. Getting high returns out of "pure alpha" is actually extremely difficult. Alpha, although unambiguous in its formal definition, is a term that is sloppily used in the industry. Though investors expect it, many don't actually know if they are getting any.

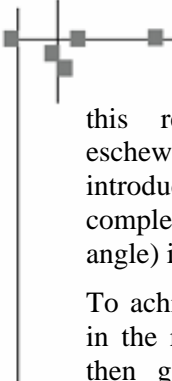
While it is indeed difficult for an investor to check a manager's performance for the presence of alpha, this dilemma is nothing compared to the manager's problem of trying to get some in the first place. Unfortunately for all, alpha is not something that can be "mined", "harvested" or "produced" as many a hedge fund claims.

Contrary to numerous marketing brochures, it is in fact not "generated" so much as "taken". And it is taken directly from other investors. One man's alpha is always another man's negative alpha. This is because, quite simply, the total amount of alpha available in the world is precisely nil. To say there is not enough to go around is an understatement—there is absolutely none. And thus it is always the case that an investor who achieves some positive alpha has done so at the expense of one or more additional investors. This is the stark reality of alpha, though the word is thrown around in the industry as if it were a minable resource available to all who make the effort to extract it. And it is the reason why alpha is so extremely difficult to "sustain".

This article begins by presenting an intuitive explanation of why there is a total of zero alpha in the world. It then goes on to argue that most investors would do well to content themselves with no alpha anyway. But for those who insist on it, the article ends with a look at hedge funds as an alpha seeking investment.

## The Basics of Beta

Alpha and beta are simply the constant and slope terms of the linear regression of return against some benchmark. While perfectly concise, mathematics is not the shortest path to an intuitive understanding of this topic. A better approach is to study the idea from a qualitative perspective emphasizing interpretation, (rather than derivation). For



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this reason, the following discussion eschews mathematics (any textbook introducing corporate finance will have complete coverage of the topic from that angle) in favor of a conceptual approach.

To achieve this, we explore alpha and beta in the realm of a simple stock market and then generalize to the entire investment universe. In this market, as in the real world, every stock issued by a company is owned by some person or organization somewhere. Thus the entire set of all stocks, “the market”, is owned by some (large) group of investors. This group will share all profits and losses between them via dividends and capital gains.

Assume that on the day that I decide to make an investment into this stock market, its capitalization is \$100 billion. That means, based on the current price of every stock, the cost to buy every last one of them is \$100 billion. After some period of time, the market gains 10%. The market cap would now be \$110 billion which means there is \$10 billion of positive gain to be shared amongst the group of investors who own the stocks. Collectively, the community of investors have put \$100 billion at risk and made 10% in return. Obviously, depending on which stocks the various investors hold, some will make more than 10%, others less. But the important thing is that the average return will be exactly 10% because there is after all, only \$10 billion dollars to be shared amongst \$100 billion of investment capital. Furthermore, there was some average risk borne by each investor, because, by the same logic, there was never more than \$100 billion to be lost. This later point is more abstract, since “risk” is not tangible in the way that return is. However, the concept is critical: No matter how one chooses to think about “risk”, there is only so much of it in the market and that which is present is shared amongst the entire investment community. If an investor wants to share in the return promised by the market, he must be willing to share in the risk. Quite intuitively, the more return he wants, the

more of the risk he must be willing to assume. But collectively, investors share a *finite* amount of risk and return. The essence of alpha and beta is in the division of the two amongst investors.

Now regardless of what any other investor does, if I invest in a slice of the entire market, making my portfolio a perfect microcosm of the whole thing then, relative to respective sizes, both the market and I will bear the same risk and get the same return. Making my portfolio a microcosm of the entire market is as simple as allocating my capital in the same proportion as the overall market. If a particular stock is 17% of the entire market capitalization, then it is also 17% of my portfolio. There are treatises to be had which argue that investing in the market in this fully diversified fashion is the best thing one can possibly do. Any other allocation takes unnecessary risk. But none of that is relevant for this discussion. The important thing is this: Investing in the entire market can be done by simply buying an index future or some index tracking fund or even manually by looking up market cap data on the internet and buying the stocks in the proper proportions. It is dead easy. And because it is so easy to do—no industries to research, no balance sheets to study, no earnings reports to read, no CEOs to interview, no models to program—it costs almost nothing to achieve. One can have a perfectly diversified portfolio of stocks, giving a perfectly fair share of all corporate profits, for no cost. The key point here is that any investor has what is like a “natural right” to take the market’s risk in exchange for the market’s return *for free*. This market return or “natural right” is nothing more than a qualitative definition of “beta”. Although this idea is just a paradigm, the implication is a universal truth: Neither money, time, nor resources need be spent for beta, the market’s overall return per unit of risk. It’s free. Only when an investor wants more than this—a better risk/return deal—does he need to spend time or money.



**If the total market return per unit of risk were a pie, beta would be an investor's fair share and alpha would be extra pieces—or bites or crumbs—taken from others.**

## Alpha

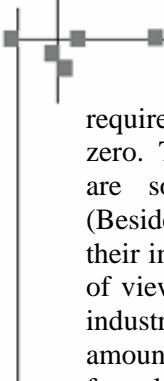
If I own a small slice of the entire market then what is left is simply a big slice of the market. To the extent I fiddle with the amount of each stock in my slice—"over weighting" and "under weighting" in the industry jargon—the other big slice will, necessarily, have the inverse of my adjusted weightings. If I over weight a stock, the rest of the market, collectively, will have to be under weight. For example, if I have the market portfolio with a little extra IBM and little less Dupont, then all other investors collectively have the market portfolio too but under weighted in IBM and over weighted in Dupont. Because risk and return must be conserved, any benefit (higher return or less risk) I get out of this tactical decision will necessarily be to the detriment of other investors. In our example stock market, if I increased my returns without increasing my risk, then at least one person's returns have *decreased* because there still only \$10 billion of profits to be shared. This is the essence of alpha: Extra return without extra risk. When an investor has "generated" alpha, it means he got more return than his level of risk warranted. Unfortunately, it also means that someone else got less. Quite simply, total alpha is nil

as a direct consequence of the finite amount of returns per unit of risk to be shared by the investment community.

## Two to Tango

The implication of a world void of alpha is that its pursuit is a zero sum game. And statistically, participating in a zero sum game is a pointless exercise because there is no expected profit. An investor, aware of this reality and his own limitations, may be wise to forego the quest completely. Zero alpha from not trying is better than the expectation of zero alpha minus the costs of trying. In fact, there is plenty of evidence that simple, boring beta is more profitable in the long term than beta + expected alpha – fees; in other words, the hunt for alpha seldom recovers the costs of the expedition. Yet there are some 10,000 hedge funds looking for a piece of the alpha pie—a pie with zero slices. In light of the complete lack of alpha in the world, it is reasonable to ask why they all embark on this cumulatively futile quest.

The answer lies between confidence and hubris. If an investor knows something another participant doesn't — if he has "an edge" — then he might just get some alpha at the expense of others. And there is not a hedge fund in the world — not even one — that does not think it has just the edge



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required to make its alpha expectation above zero. This is why, in a zero sum game, there are so many people willing to play. (Besides, hedge funds get paid to play by their investors, which, from a business point of view, is reason enough!) But across the industry, only one thing is assured: a fair amount of the trillion plus dollars searching for alpha via hedge funds will end up providing it for others — not taking it. There is simply no alpha for a lot of speculative capital in this world.

### Beta's Omnipresence

Within a subsection of the market, say pharmaceutical companies, the same principle holds: conservation of risk and return. Any investor can take pharmaceutical industry risk and get the industry's return quite easily; (pharmaceutical beta). However, once he starts favoring particular pharmaceutical companies over other pharmaceutical companies, he is then seeking alpha. Within the sector, total alpha is still zero meaning that any investor who gets more return per unit of risk in the sector has taken it from another investor. Indeed, alpha and beta exist with respect to small cap companies or growth companies or export oriented companies, or any classification one cares to make. There is always conservation of risk and return with in the grouping and hence the concept of alpha and beta.

Also note that the investor's decision to take pharmaceutical risk—even just its beta—is an *alpha* seeking decision in the context of the entire market. Almost any beta exposure is an alpha seeking decision in a larger context. Choosing a pure beta exposure to the S&P500—as opposed to the Nikkei or FTSE—is an alpha seeking decision in some global context. That alpha and beta exist endlessly on various levels might make the whole exercise seem quite arbitrary. But this would be an incorrect assessment. When interpreted properly, alpha and beta offer a concise expression of the trade off between risk and return in whatever domain an investor is active. A long/short fund

focusing on the pharmaceutical industry must be compared to a simple investment in the sector. If a fund simply delivers the beta of the industry, it has done nothing to earn its fees.

### The Joy of Alpha

The appeal of alpha is obvious: Excess return for no excess risk would appear tantamount to free money. Of course in reality there are risks borne to achieve alpha (just ask the guy who got the negative alpha.) But alpha is achieved from taking risks that have nothing in common with the risks associated with beta. Alpha returns are the rewards for taking unique risks, whereas beta risks manifest as headline news items that retrospectively explain market moves each day: earnings, fiscal and monetary factors, consumer spending, inflation and so on. An investor with beta exposure to the S&P500 can therefore have an inherent sense of the risks he is taking by reading the headlines of any business periodical. But alpha risks are not tangible in the same way. The Wall Street Journal will never offer any clues on alpha risks because they have nothing to do with any broad market factors. Indeed, an “alpha” source that shows sensitivity to some tangible economic factor is most likely not alpha at all but rather beta from somewhere the analyst has not looked yet.

An alpha source is valuable precisely because it comes from taking something other than market risk. No matter what the market does, a source of alpha can not be damaged by even the most violent turmoil because its risks lie elsewhere. It is thus the perfect supplement to any portfolio. While making no promises of perpetual positive returns, an alpha source does guarantee a return stream which will behave independently even during the market's worst times. Any investor who has watched all his positions lose money in tandem during a market crisis understands the value of true diversification as offered by alpha.



## To Seek or Not to Seek

Given the charms of alpha, it is not surprising that so many investors covet it. But despite its appeal, the unglamorous companion beta, is nonetheless an excellent investment: It offers a diversified, tangible set of risks and a share of the market's returns in compensation. It is readily available and cheap. And, most importantly, it has a 100 year track record of 10% per annum. However, any investor is welcome to seek more than his entitlement of beta. He need simply own something different from the market portfolio. But in doing this, he runs the risk of getting it wrong—of getting negative alpha. Now and always, 50% of capital hunting for alpha ends up being the prey. This is axiomatic in a zero sum game. The pursuit of alpha is therefore to be approached cautiously. An investor seeking more than beta must also ask whether the alpha (or technically, the expected alpha), justifies the cost (in time or in money if he gets help). Theoretically and empirically, there is plenty to suggest that seeking alpha is a waste of both.

### The Case Against Seeking Alpha

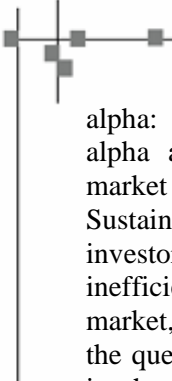
The case against seeking alpha rests on the *efficient market hypothesis*. An efficient market is one whose securities cost exactly what they are actually worth; nothing overvalued, nothing undervalued. The theory is based on the simple idea that there are enough smart investors participating in the market that no security could possibly remain wrongly priced for long. Considering the number of competent people watching most markets, it would seem reasonable that between them all they are digesting every last bit of data and as a result prices reflect all known information. Of course, less competent investors will drive prices in arbitrary directions, but in all likelihood, will cancel each other out in terms of net effect on the market. To the extent that they do not, competent investors will arbitrage mis-pricings. In theory, arbitrage opportunities presented to the

attentive investors ensure that equilibrium is a perpetually efficient market.

The implication of the efficient market hypothesis is that no investor can hope to acquire any information that is not already known and reflected in the price of a security. An investor can do all the homework she wants, but in an efficient market, all assets sell for exactly what they are worth—there are no “cheap” stocks. If an investor can't hope to know anything that is not already reflected in a security's price, then by implication, she certainly cannot expect to consistently generate returns that are better than the market, i.e. she can have no hope of alpha. In an efficient market, chasing after alpha is completely futile. Some may achieve it and delude themselves and others into thinking it was skill. But if markets are efficient, only luck can explain alpha.

Fortunately for the entire fund industry, whose existence would be pointless were markets truly efficient, there is evidence to contradict the hypothesis. Irrational investors don't cancel each other out, (think dot com bubble) and genius investors do not appear every time something is mis-priced because they are smart enough not to jump in front of trains. (No one dared short the NASDAQ in 1999, even though the chairman of the US central bank practically declared the market inefficient!) There are more problems. For instance, stocks change price too frequently if they are only reacting to fresh information. October 1987 is a particularly stark case in point. On October 19<sup>th</sup>, the S&P dropped 23% even though there was no news that day to spur a decline. This is true for many of the worst one-day drops in financial markets. So the reality is that markets are not efficient, at least not perfectly. And if markets are anything but perfectly efficient then there exists portfolios which offer better risk/return characteristics than the entire market; i.e., there is alpha to be had.

Although not precisely quantifiable, there is a relationship between market efficiency and



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alpha: the more efficient the market the less alpha available from it. The degree of market inefficiency is a critical point. Sustainable alpha generation requires an investor to perpetually identify market inefficiencies. The more efficient the market, the tougher this task becomes. Thus the question of how much sustainable alpha is theoretically available hinges on how inefficient markets actually are. While it is clear markets are inefficient, it is also obvious that they are not inefficient enough to create any sort of alpha bonanza.

Thus the argument against seeking alpha is simply that markets are efficient *enough* to impede most investors from sustaining alpha. In an efficient market the optimal portfolio is the market portfolio, (i.e pure beta); in a *near* efficient market, beta is *near* optimal.

Empirical studies have shown that unglamorous buy and hold strategies (beta) tend to outperform active strategies (beta +/- alpha – costs) over the long term. And there is a last simple argument against alpha pursuit: Because of the zero sum nature of alpha, one must necessarily be better at alpha generation than at least half the capital chasing alpha in the market. And given the size of global capital markets, that is a lot of competition.

### **The Case for Seeking Alpha**

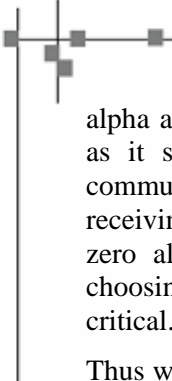
Given the long term reliability of diversified market portfolios, the strong arguments that holding nothing but beta is optimal and the odds against consistently generating alpha in near efficient markets, it's understandable that many smart investors are content with just beta. But there are good reasons why a rational investor might still seek alpha. The first is dead simple: Markets make no promise about appreciation. They do not necessarily go up in any quarter, year, or even decade. Beta, for all its fine qualities, is hardly of any use when markets are down—in fact, it becomes a liability. The desire to generate positive returns in the immediate future, regardless of the market, is a perfectly reasonable objective. In a

sense, all investors are absolute return investors and hence have a strong motivation to seek returns wherever they can be found. Enough alpha can compensate for poor returns from beta.

There is a second strong motivation to seek alpha: The nature of beta. If one invests in the market as a whole, then yes, one is diversified within that space, but ultimately, there is only one return source: that market. Diversification being a pillar of sound strategy, a prudent investor is therefore attracted to the prospect of an alternate source of returns. To have returns coming from somewhere other than the market—indeed somewhere completely uncorrelated with the market—is extremely desirable. And alpha, by definition, has absolutely no correlation with beta. It is therefore the perfect diversification and the ideal companion to beta. A priori, an investor cannot know if the search for alpha will prove profitable, but he can be certain of one thing: The alpha he gets will have no relation to how the market does. So there are strong, rational reasons to seek alpha in spite of the difficulty in consistently getting it.

### **Enter the Hedge Fund**

Having weighed the arguments for and against, an investor who concludes that a pure beta portfolio is not sufficient will have to enter the alpha arena. It is that simple. Either one is content with beta or not. (And judging investors by their actions, most are not, though a fair few will not have thought it through in quite this way.) So, having decided on the need for alpha, the next question is then, how to go about the hunt? Given the difficulty of amassing enough time, resources, experience and skill, most investors choose to pay a professional. This would seem sensible. Yet it is interesting to note that the total fees that are paid each year by investors to “experts” for this service is in the order of tens of billions of dollars. The irony is that, in all likelihood, less than half the capital seeking professional help will actually get positive



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alpha after costs. But all will pay. Absurd as it seems, taken collectively, an entire community pays billions in fees for receiving a total of nothing, (i.e. a total of zero alpha), between them all.<sup>1</sup> Clearly, choosing the right people to seek alpha is critical.

Thus we come to hedge funds. Hedge funds are alpha hunters for hire. Theoretically, but alas not in reality, a hedge fund should deliver alpha and nothing but alpha. The reason for this follows directly from the fact that beta is already available for free. An investor can get market exposure for way less than the cost of a hedge fund, so why would he ever pay for beta? Sadly, this is not a rhetorical question. The answer is that hedge funds are happy to sell beta to any investor who is willing to pay for it. Because so many investors don't have the ability to distinguish alpha from beta and also don't know that beta is available cheaply elsewhere, hedge funds continue to sell it at "2/20".

In theory, alpha and beta are nicely separable, but, as we shall see, in reality it is far more difficult. But the principle still holds: A hedge fund should not sell beta, or, more properly, an investor should refuse to pay for it. We can perhaps excuse beta accompanying alpha as long as the hedge fund does not charge for the beta component. A performance fee on the alpha component of a returns is quite reasonable. But there are few hedge funds that make this distinction—whether it be difficult or not. Why would they if investors don't insist on it?

In the days before hedge funds were en vogue, the concept of not charging for beta seemed to be better understood. Professional money managers were judged against an index. "Beating" the index—

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<sup>1</sup> To the extent that professional investors are taking some alpha from amateurs would make this statement slightly too bold. But suffice to say, there is billions of dollars paid out to professional investors who generates nothing but negative alpha.

tantamount to generating alpha—was implicitly rewarded by more capital being attracted to the manager. No one was impressed by 10 percent returns when the market was up 20. The problem was the converse: -15 percent when the market was worse was little consolation for an investor. In the presence of a down market, it seems reasonable to claim that, ultimately, all that matters is return. What good is beating an index by 3 percent if it's down 12? A professional money manager should not be able to hide behind an index when he fails. After all, the investor still losses money. A good investment would have been no investment. This all leads to the conclusion that a manager should be paid if and only if he actually makes money. And thus the concepts of "absolute returns" and "performance fees" were born.

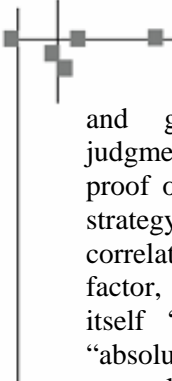
But the pendulum has now swung too far in the "absolute returns" direction. Slapping said label on a fund which is more or less long the stock market is not sufficient to call the thing a hedge fund and charge exorbitant fees. I once evaluated a New York based equity long short manager who had returned 11.4% net to investors in 2003, their first full year of returns. In our meeting, the partners were keen to point out that the strategy had proved successful thus far as evidenced by recent performance. They went on to explain that their prospectus gives them a broad mandate to be net long or net short. Thus far, they had maintained a long bias.

"The S&P returned close to 30% in 2003," I pointed out.

"Ah, but we are absolute return fund," the senior partner answered, "You should not compare us to any stock index."

"You wish!" I thought.

In 2003, 447 of 500 S&P stocks went up, meaning it was pretty hard to buy any equity in that year and not make money. To not judge this manager against the tail wind he enjoyed all year is naïve. A hedge fund can not simply label itself "Absolute Returns"



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and gain immunity from contextual judgment. In a sense, there is an onus of proof on the fund. If it can show that its strategy contains no beta because it lacks correlation with any measurable market factor, then it has the privilege of labelling itself “Absolute Returns”. Technically, “absolute return” should imply a conduit of pure alpha. The problem endemic in the industry now is not just that “absolute return” has become a buzz phrase void of meaning but that it is treated as a label that can be arbitrarily applied to any strategy, excusing it from benchmarking and instantly allowing beta to be sold as alpha.

That said, there is more going on here than evil hedge funds maliciously selling beta in the guise of alpha. There are good reasons why beta is so prevalent. First, genuine pure alpha is actually extremely hard to find. To achieve it, a manager must have a real, sustainable edge that almost no other market participant has. This reduces to an advantage in either the acquisition or the processing of information. But how often does information come into the hands of a manager that other investors don’t already know? Almost never. This leaves information processing as the only possible edge. Whether it is a manager’s raw trading instinct based on 20 years experience plus a Bloomberg at one extreme or the most systematic, model based computer controlled trading strategy at the other, it seems unlikely that any strategy can perpetually work or remain in the knowledge of a few. And so barriers to the consistent production of alpha are immense implying there are few advantages a hedge fund can realistically hope for. And without some advantage, the search for alpha has zero expected return. In this light, it is no wonder managers are forced to turn to beta!

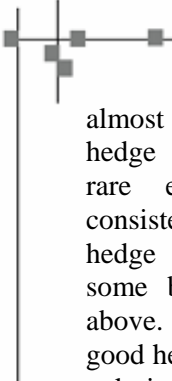
Beta, as we have noted, is cheap, easy and reliable whereas searching for alpha is resource intensive. Hence a hedge fund—a business—is constrained on one side by finite resources and on the other by the need to achieve returns. Consciously or otherwise, injecting beta into an investment

is a cost effective way to add expected return to a portfolio. Thus the needs of the investor are not necessarily aligned with those of the hedge fund *business*. An investor might prefer minimal returns coming from an authentic pure alpha strategy whereas a manager might find the lack of high absolute returns difficult to sell when competing with other hedge fund *businesses*.

The presence of beta, by the way, is the reason hedge funds have such an annoying habit of failing investors at the exact same time as conventional strategies do. Hedge fund returns, obfuscated by the combination of multiple beta sources and perhaps even some alpha, can look reasonably uncorrelated to other markets in benign times. But if a fund is executing strategies that are beta linked, then the die is already cast: Its fate is inexorably tied to that of the market. If and when the market experiences a substantial decline, there is little hope the fund can avoid losses. The presence of beta means a fund is fundamentally exposed to the same risk factors as conventional investments. Beta, the very reason a fund might have done well in the past, can eventually prove its Achilles heel. Thus, the performance of a hedge fund through volatile market conditions can tell an investor a lot about how much beta is really present.

So, while hedge funds might be the natural choice for the alpha seeking investor, a serious problem is they often provide beta rather than alpha. Therefore, hedge funds as a class provide no solution: An arbitrary diversified hedge fund portfolio will in all likelihood contain beta, a collection of negative and positive alpha and fees, all summing to something less than beta. (Hence the absurdity of the “investable hedge fund index”.)

In theory we can now define the ideal hedge fund: It is one that consistently provides alpha *after fees* with zero beta. Such a fund positively impacts *any* portfolio to which it is added. It is the perfect hedge fund and it



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almost certainly does not exist. In reality, hedge funds truly seeking pure alpha are rare enough, those who achieve it consistently are even rarer. The fact is, hedge funds almost certainly come with some beta for all the reasons discussed above. Therefore a practical definition of a good hedge fund is one that at least provides a desirable beta source while still generating alpha after fees. A desirable beta source is one that is not already sufficiently represented in the portfolio the hedge fund is to augment. Thus an investor gets value from a hedge fund if and only if it provides alpha after fees and beta exposure that her portfolio needs. Note this means no hedge fund can be said to be good in any absolute sense. The quality of the fund is always a function of the larger portfolio it is to join as well as its own characteristics.

### **The Fund of Hedge Funds**

A fund of funds warrants its fee if it is capable of building a portfolio of diversified, alpha generating hedge funds. As is clear by now, this is no easy task, which is why the few that can do this are worth their cost.

### **The Investable Hedge Fund Index**

As mentioned parenthetically above, a hedge fund index cannot possibly be of any value to an investor since it is almost certainly a jumble of betas, offsetting alphas and fees.

### **The Problem of Luck**

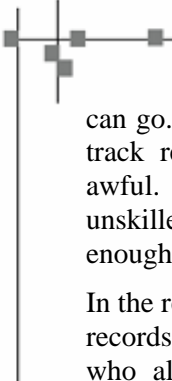
On September 11, 2001, investors who were long gold, short airline stocks, or long defense stocks, to name a just few good trades, made money because of the manifestation of a risk that none of them could have imagined. No investor fortunate to profit in such circumstances would ever claim their profits on that particular day were due to their skill. They were lucky and that's all. This stark case illustrates a particular problem with the analysis of alpha: The role of luck.

In general, it is difficult to determine, ex-post, why alpha was won or lost. Every investor who seeks excess returns does so

taking positions he rationally believes to have positive expected returns in light of the risks. Should he end up achieving his desired profit, he will likely conclude it was because his analysis was correct. In contrast, the investor providing him the alpha will probably conclude that he was unlucky rather than unskilled. The point is, many investors seeking alpha will find it but not necessarily for the reasons they thought. Just because one rationalized an expected outcome which subsequently occurs does not necessarily mean that it occurred for reasons postulated a priori. Those short United Airlines on September 11 made money, but not for the reasons they thought they would. Obvious in this case, but the general case can be less clear.

Thus the role of luck makes it even more difficult to evaluate a hedge fund. Alpha from good fortune cannot be expected to be sustainable. Unfortunately, there is no information in the track record of a hedge fund to aid in attribution of alpha to its two possible sources: skill and luck. Thus a good track record—even one dripping with alpha—does not imply a skilled manager. A good track record is merely a prerequisite for further investigation as opposed to justification for an investment.

The problem of luck is not a mere theoretical exercise. It is a real problem arising as a statistical artifact of the sheer number of hedge funds in the world. It completely undermines the industry's favorite crutch: track record. Funds that have no edge at all—of which there are many—need not all fail immediately. There are so many hedge fund *attempts* that it is inevitable that some bad ones end up with good track records. To demonstrate just how far luck can take a fund, I did a simple experiment: By simulation in Excel, I created track records for 100 equity long short funds that did nothing but randomly allocate \$100 amongst random combinations of S&P500 shares. The only constraint was that the fund maintain equal dollar longs and dollar shorts. Each also charged 2%/20%. The results demonstrate just how far luck



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can go. After 3 years, 5 of 100 have stellar track records. Of course many more are awful. But the point is, given enough unskilled hedge funds, three full years is not enough time to weed the last of them out.

In the real world, funds with three-year track records are the survivors of a larger batch who all had big aspirations years earlier. But there is every chance that some of those hedge funds are the inevitable few that survive largely due to luck. Of the roughly 7000 hedge funds that existed at the start of 2005<sup>2</sup>, 848 had vanished by year end.<sup>3</sup> But amongst the survivors were both the skilled and the lucky. Best not to mistake one for the other, which is why quantitative analysis is a beginning not an end.

### Checking for Alpha

For all its intricacies, there are ultimately two and only two ways to achieve alpha. It can be had by market timing or by security selection. An investor who takes exposure to the market as whole, taking pure beta risk, but manages to exit the market ahead of a few down turns will have achieved some alpha because, during the life of her strategy, she will have taken less than the total market risk (by being divested some of the time) but received more than the market return (having been absent while it was declining.) Thus good market timing translates to alpha.

The other option is security selection. An investor who manages to select better performing securities without taking excess risk achieves alpha. Note that if the extra returns came with extra risk, then she has achieved nothing toward alpha generation. It is worth mentioning that many a hedge fund show their “monthly alpha” as their return less the market’s return. This is nonsense as it leaves risk out of the equation altogether.

The line between the two methods for generating alpha can easily become blurred,

but this is not a problem at all. To some extent an investor can remain blissfully indifferent to how the alpha is created, as long as it is. The challenge of course is determining if a manager is capable of the task *going forward*. To this end, past performance offers only minimal assistance. When the luxury of a track record is available, the question of whether alpha *was* generated can be addressed. But the answer is only useful to a point. If past performance does indeed reveal alpha, then the manager warrants further study to determine whether the good results can be maintained. On the other hand, if there is no sign of alpha in the past, there is little basis for optimism about the future unless the manager has some good explanations for past failings. Thus examining a track record for alpha is a useful starting point. In a world with over 10,000 hedge funds, it does offer an efficient, semi-automatable method for filtering out poor performers.

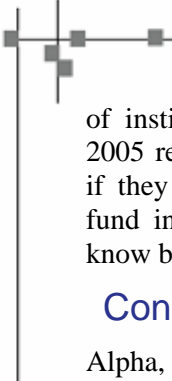
Checking for alpha is a process of elimination. Only by confirming that returns cannot be explained by beta exposures can one confirm the presence of alpha. Doing this is both art and science. An investor need simply regress the manager’s returns against the correct beta benchmark or benchmarks to check for alpha. This can be done easily in Excel or using one of hundreds of tools available to the industry. That is the science of alpha analysis.

The art is knowing what beta factors are relevant for the analysis. For example, measuring a globally invested stock fund against the S&P500 will mistakenly find alpha that is not really there simply because the choice of beta benchmark is wrong. The appropriate benchmark is entirely dependant on what the fund is actually doing. As such, an investor must understand the nature of a fund’s strategy. This becomes challenging as strategy complexity increases. But it is a challenge that must be met, because choosing poor benchmarks only results in “false alpha” and ultimately poor investment decisions. It is noteworthy that a full 40%

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<sup>2</sup> Source: *The Economist*

<sup>3</sup> Source: HFR



of institutions surveyed by State Street in 2005 readily admit they simply don't know if they are getting alpha from their hedge fund investments. How many more don't know but won't admit it, remains unknown.

### Conclusion: The Cult of Alpha

Alpha, the humble y-intercept of a linear regression, has somehow achieved cult status in the hedge fund industry. That only a few understand the concept's intricacies is both cause and symptom of this phenomenon. That alpha is something to be coveted is about the only thing universally understood. Its precise definition, its short supply, the impediments to finding it, and its real utility are generally not. Because finance rarely offers any absolutes and any view can be justified, alpha is often treated as a subjective concept. It is not. Its meaning is perfectly defined and not debatable. The existence of zero alpha in the world is not a view; it is a fact. And it is fact easily demonstrated with high school mathematics. Intuitively, total alpha is nil because of the finite amount of returns in a market that must be shared amongst all investors; no investor can get extra return without another getting less.

That there is zero total alpha in the world has extreme implications:

1. On average, 50% of capital seeking alpha will not get it; after fees, the statistics are even worse.
2. One investor's alpha is always another's negative alpha.
3. The pursuit of alpha is a competition between investors; it is a zero sum game.
4. An investor without some advantage over other investors has no expectation of success.

Given the above, the decision to pursue alpha should be taken soberly. While beta is available to all by right, alpha is a privilege for the skilled (and the lucky.) Seeking alpha is risky but success is well compensated. But to seek it effectively takes real skill. An investor after all is in direct *competition* with her peers. And her peers include bone fide geniuses, Nobel laureates, thousands of PhDs, and tens of thousands of professional investors, each with the same mission. Between them all, they will share the zero dollars of alpha available in the world.

How much alpha is good? Alas, it is impossible to answer. Since alpha, by definition, is return that cannot be attributed to the market, there is nothing to compare it to. It correlates with nothing and there does not exist a benchmark to compare with. All alpha is unique. But this is the very beauty of it: In a world where diversification is so unreliable, genuine alpha is a godsend. Any time an investor adds a truly uncorrelated return source to her portfolio, she improves it. Sustainable alpha is like a golden goose: One does not fret the size of the egg.