How High are Hedge Fund Fees?

Ludger Hentschel
Equity Investors Group

Research Report #6

March 6, 2008

Equity Investors Group
New York Life Investment Management
1180 Avenue of the Americas, 22FL
New York, NY 10036
(212) 938–6500
www.nylim.com

How High are Hedge Fund Fees?

LUDGER HENTSCHEL[a]

[a]Equity Investors Group,
New York Life Investment Management, New York, NY 10036

March 6, 2008
First Draft: June 2007

Preliminary and Incomplete
Comments Welcome

ABSTRACT: Management fees compensate active investment managers for delivering alpha to investors. It is natural to consider the fees as a fraction of alpha, not as a fraction of assets, as is commonly done. The paper shows how to measure fees as a fraction of alpha for standard long-only and hedge fund fee structures. Under plausible assumptions about the active risks and information ratios for skilled managers, long-only managers and common hedge fund managers charge similar fractions of alpha. If the fees for alpha are similar, they do not motivate fund managers who manage long-only and hedge fund strategies to favor either strategy in allocating alpha capacity.

KEYWORDS: Active risk, alpha, hedge fund, information ratio, performance fee.

JEL CLASSIFICATIONS: G11.

Contents

1 Introduction

Clients of active investment managers primarily purchase and pay for returns in *excess* of a passive benchmark, or "alpha". Since fees compensate the investment manager for delivering alpha to the investor, it is natural, appropriate, and important to consider the fees as a fraction of alpha, not – as is commonly done – as a fraction of the assets under management. This paper explains how to convert fees into fractions of alpha for standard long-only and typical hedge fund fees. Based on this conversion, the paper shows how to compare fees across long-only and hedge fund managers with very different fee structures and expected alpha.

Typical long-only investment managers charge fees as a fixed percentage of assets under management. These fixed fees range from a few basis points for index funds to well above 1 percent per year for many actively managed mutual funds. The stereotypical hedge fund fee schedule calls for a fixed management fee of 2 percent of assets per year and a performance fee of 20 percent of profits. This is often summarized as a "2-and-20" fee. Since a 2 percent fixed fee by itself appears high compared to most long-only managers, many observers consider the overall hedge fund fees to be extremely high.

For a proper comparison of hedge fund fees and long-only fees, the comparison has to include the alphas delivered by the two strategies. Since hedge funds operate under fewer constraints on their investments, it is likely that a skilled hedge fund manager has higher active risk and a higher information ratio – and hence higher alpha – than a similarly skilled long-only manager. Under plausible assumptions about the strategies' active risks and information ratios, hedge fund fees appear comparable to the fixed fees charged by traidtional long-only managers. A competitive market for alpha should result in similar prices for alpha.

Some investors are concerned that a manager, who operates a traditional long-only strategy for fixed fees as well as a hedge fund strategy under the supposedly higher hedge fund fees, may choose to allocate alpha to his hedge fund in order to earn the higher fees. If the fees for alpha are similar in either strategy, however, fees don't motivate the fund manager to favor either strategy in allocating alpha capacity. The analysis presented here allows investors to compare long-only and hedge fund fees to assess such possible conflicts of interest. Of course, the same analysis allows managers who manage multiple investment strategies to set fees to avoid large fee disparities across their strategies.

It is important to note that this paper makes no claim that one fee *structure* is better than another. As Kahn, Scanlan, and Siegel (2006) point out, the structure of fees has important implications for manager incentives. I do not consider these aspects here. The paper focuses on the *level* of fees and the resulting average cost of alpha under different fee structures.[1] A simple analogy makes this distinction obvious. For a particular trip, it is appropriate to compare the

[1] Unlike Goetzmann, Ingersoll, and Ross (2003), I do not calculate the present value of fees. The present value of fees depends on the investment horizon, which seems hard to pin down. If the manager retains a fixed fraction of alpha, fees as a fraction of alpha, however, are constant for all investment horizons.

fixed fare charged by a limousine service to the fixed plus variable fare charged by a taxi cab. The result of this particular cost comparison may sway the choice of transportation but does not imply that all taxi and limousine services should adopt the same fee structure. Similarly, the fact that a particular active long-only fund provides alpha at higher or lower cost than a particular hedge fund is an important ingredient in choosing between these two sources of alpha but says relatively little about the optimal fee structure for all investment managers.

2 Fees as a Fraction of Alpha

An investor who hires an investment manager to manage a pool of assets, A, cares about how much money he will earn after fees. The investor's realized profits net of fees, π, are

$$\pi = (\alpha - \phi(\alpha))\, A, \tag{1}$$

where α is the pre-fee realized alpha on the investment, and $\phi(\alpha)$ are management fees as a function of alpha expressed in percent of managed assets. We carefully measure alpha in excess of an appropriate benchmark, so that π is the true economic profit from active management.

Prior to hiring an investment manager, the investor does not know the subsequent alpha and has to consider his expected profit,

$$E[\pi] = (E[\alpha] - E[\phi(\alpha)])\, A, \tag{2}$$

where E denotes expectations, so that $E[\alpha]$ is the expected alpha, $E[\phi(\alpha)]$ are the expected fees as a function of alpha expressed in percent of managed assets.

If we divide and multiply the right-hand side of equation (2) by expected alpha, we find

$$\begin{aligned} E[\pi] &= \left(1 - \frac{E[\phi(\alpha)]}{E[\alpha]}\right) E[\alpha]\, A \\ &= (1 - \theta)\, E[\alpha]\, A. \end{aligned} \tag{3}$$

The fraction $(1 - \theta)$ is the share of expected investment profits the investor retains. The fraction

$$\theta \equiv \frac{E[\phi(\alpha)]}{E[\alpha]} \tag{4}$$

is the share of expected investment profits earned as fees by the investment manager.[2]

[2] Wags will argue that $\theta \equiv E[\phi(\alpha)]/E[\alpha]$ is undefined because the aggregate alpha and hence a reasonable expectation of alpha is zero. The counterargument, of course, is that an investor should not pay an active manager if he does not expect the manager to produce alpha. The analysis in this paper is predicated on the investor's expectation that the managers he is comparing will produce positive alpha.

Active risk is notably absent from the argument so far. While the typical investor presumably is concerned about active risk in his portfolio, there are at least two reasons to believe that this risk plays a secondary role in comparing managers. First, investors should be able to diversity the active risk associated with each manager's alpha by diversifying across managers. If that is the case, the price investors assign to the active risk of any one manager should be quite low. Second, most comparisons are likely to involve managers with broadly similar risks. In either case, risk plays a subsidiary role to alpha. As long as alpha is the most important ingredient in manager comparisons, it is a useful simplification to focus on the price of alpha. Almost all comparison shopping is based on such useful simplifications. When we compare the prices of cars, we obviously care about many goods and services other than cars. Moreover, not all of the cars we consider are literally identical. Yet, within the category of vehicles that we are willing to consider, the price of each car becomes a major input into the purchasing decision.

The main objective of the paper is to compare the fraction of expected alpha retained by the asset manager, θ, across long-only funds and hedge funds. In order to compare long-only and hedge fund fees, I briefly describe the standard form of each fee arrangement.

Traditional long-only strategies charge fixed fees as a fraction of assets. I denote these fees as f_l for the long-only manager. As a fraction of assets, the total fee charged by a long-only manager with a fixed fee f_l is

$$\phi_l(\alpha_l) = f_l. \tag{5}$$

In case the market price for providing the beta embedded in the strategy is not close to zero, we can subtract the market fee of this beta exposure from the stated fixed fee to get a better estimate of the fixed fee for alpha. The fees for index funds with the appropriate beta exposure are an obvious way to gauge the fee of the beta. For simplicity, I will assume that the market fee for beta is zero.

Typical hedge fund managers charge a fixed fee f_h plus a performance fee equal to $p_h(\alpha_h - f_h)$, where α_h is the pre-fee alpha generated by the hedge fund. The fraction of profits retained by the manager is p_h, which often equals 20%. As a fraction of assets, the total fee charged by the hedge fund manager is

$$\begin{aligned}\phi_h(\alpha_h) &= f_h + p_h \max\{\alpha_h - f_h, 0\} \\ &= f_h(1 - p_h) + p_h \max\{\alpha_h, f_h\}.\end{aligned} \tag{6}$$

As for the long-only fund, alpha is the gross return in excess of an appropriate benchmark. For a market-neutral fund, for example, the economically appropriate benchmark is the risk free interest rate. If the hedge fund has material market exposures, we once again can remove the market fee for beta from the fixed fees. The performance fee is typically paid on the excess return over the benchmark, α_h, and over the fixed fee, f_h. Under this arrangement, the hedge fund manager receives a performance fee if he beats the benchmark by more

than the fixed fee.[3] As mentioned previously, p_h often equals 20%. Although the popular perception is that f_h often equals 2%, Asness (2004b) characterizes the "canonical hedge fund fee" as 1-and-20. This is supported by the extensive analysis in French (2008). In the remainder, I will work with $f_h = 1\%$ and $p_h = 20\%$.

The hedge fund fee has an obvious option component: If alpha exceeds a threshold, the fund earns a performance fee in addition to the fixed fee, otherwise the fund earns the fixed fee only. Much has been made of the option features of hedge fund fees. If, for example, a manager collects a performance fee for each month the fund has a positive alpha but does not rebate the fee for each month the fund has a negative alpha, the fees reward volatility even when the manager delivers no long-run alpha. Precisely to avoid this problem, many hedge fund fee arrangements escrow the performance fee from periods with positive alpha and reduce the escrowed amount during periods with negative alpha. This arrangement is referred to as a "claw-back" clause. In practice, the claw-back period is frequently one year.

Claw-back arrangements differ slightly from high water mark clauses found in some hedge-fund contracts. Consider a fund that starts the year with six months of good performance and ends the year with six months of bad performance for a one-year alpha of zero. Under a contract with a high water mark, the fund would collect performance fees for the first six months of the year but would not receive additional performance fees until it reaches the high water mark again. Under the claw-back arrangement, the fund would not receive any performance fees for the year but would earn performance fees on any positive alpha produced over the next year.

If the claw-back period covers the life of the investment, the investor pays a performance fee for the total alpha delivered and no performance fee if the total alpha is negative. This arrangement does not eliminate the option feature of the hedge fund fees. It does however, result in a single option that is much easier to evaluate than the sequence of options implied by other fee arrangements. For the remainder, I assume that the hedge fund fee is subject to a one-year claw-back period for the performance fee and that the investor holds the investments for one year. This implies that the performance fee is proportional to a single one-year option on the fund's alpha with a strike price equal to f_h.[4]

The long-only and hedge fund managers retain the same fraction of expected alpha if

$$\frac{E[\phi_l]}{E[\alpha_l]} = \frac{E[\phi_h]}{E[\alpha_h]}, \tag{7}$$

[3] Some funds charge the performance fee on the return, not alpha, in excess of the fixed fee. If the benchmark return is r_b, the performance fee for such funds is $p_h \max\{\alpha_h + r_b - f_h, 0\}$. This is equivalent to increasing the fixed fee by $p_h r_b$ and lowering the performance hurdle in the fee calculation by r_b.

[4] Shorter claw-back periods imply that the fund managers holds a sequence of call options. Such an arrangement would pay the fund manager a slightly higher fee than we consider here.

or

$$f_l = E[f_h(1-p_h) + p_h \max\{\alpha_h, f_h\}] \frac{E[\alpha_l]}{E[\alpha_h]}. \tag{8}$$

I prefer to decompose alpha into information ratio and active risk because it seems easier to judge the likely differences in these parameters and because the decomposition emphasizes that a higher information ratio and a higher active risk produce a substantially higher alpha. The *ex ante* information ratio, $E[IR]$, is defined as the expected annual excess return, $E[\alpha]$, divided by the target annual standard deviation of the excess returns, σ. All quantities are gross of fees. The standard deviation of excess returns is also called active risk or tracking error. Of course, this implies that

$$E[\alpha] = E[IR]\,\sigma. \tag{9}$$

After decomposing the expected alpha into $E[IR]$ and active risk, the equivalent fixed fee is

$$\begin{aligned} f_l &= E[f_h(1-p_h) + p_h \max\{IR_h\,\sigma_h, f_h\}] \frac{E[IR_l]}{E[IR_h]} \frac{\sigma_l}{\sigma_h} \\ &= f_h(1-p_h) + p_h\, E[\max\{IR_h\,\sigma_h, f_h\}] \frac{E[IR_l]}{E[IR_h]} \frac{\sigma_l}{\sigma_h}. \end{aligned} \tag{10}$$

Finally, like Goetzmann, Ingersoll, and Ross (2003) and Ennis (2005), I assume that alphas are normally distributed.[5] In particular, I assume that the hedge fund alpha is normally distributed with mean $E[IR_h]\,\sigma_h$ and variance σ_h^2, $\alpha_h \sim N(E[IR_h]\,\sigma_h, \sigma_h^2)$. This implies that $IR_h \sim N(E[IR_h], 1)$. The normally distributed information ratio, allows us to evaluate $E[\max\{IR_h\,\sigma_h, f_h\}]$ in equation (10).[6]

The relation in equation (10) has all of the expected properties. All else equal, a more successful long-only fund with higher IR_l or higher active risk, σ_l can charge higher fixed fees while still retaining the same fixed fees as the hedge fund. Conversely, in order to match the fees as a fraction of alpha of a more successful hedge fund with higher IR_h or higher σ_h, a long-only fund has to lower its fees. Similarly, the long-only fund also has to lower its fees if the hedge

[5] Assumging that alphas are normally distributed is certainly convenient. There is also reason to believe that the assumption is quite accurate for long-only equity managers. For certain hedge-fund strategies, however, Fung and Hsieh (1997) document that the payoffs are option-like, so that their returns are clearly non-normal. Part of the non-normality of the reported excess returns may stem from improper benchmarks. For strategies with non-normal alphas, we have to modify the distributional assumption. We can work with nearly any distribution but some distributions may force us to evaluate the expectation numerically. Changing distributions is relatively simple because, unlike Goetzmann, Ingersoll, and Ross (2003), I am not trying to solve the more complicated problem of pricing the alphas in an absence of arbitrage framework.

[6] When the information ratio is normally distributed, we can show that

$$E[\max\{IR_h\,\sigma_h, f_h\}] = E[\alpha_h] + \sigma_h\left(\varphi(m) + m\Phi(m)\right),$$

where $m = f_h/\sigma_h - E[IR_h]$, $\varphi(m)$ is the standard normal probability density evaluated at m, and $\Phi(m)$ is the cumulative standard normal density evaluated at m.

fund charges lower fixed fees f_h or retains a smaller share of profits by lowering p_h. The term $E[\max\{IR_h\,\sigma_h, f_h\}$ captures the option value of the hedge fund performance fee. The option value of the hedge fund performance fee rises with lower fixed fees f_h, higher active risk, σ_h, or higher IR_h. As the option value of performance fees rises, the long-only fund can charge higher fees while still matching fees as a fraction of expected alpha.

Because hedge funds are less constrained, we generally expect them to have higher information ratios and higher levels of active risk than long-only funds, so that $IR_l/IR_h < 1$ and $\sigma_l/\sigma_h < 1$. Clarke, de Silva, and Thorley (2002) show that the long-only constraint prevents a skillful manager from forcefully implementing his negative views on assets with small benchmark weights. This prevents long-only managers from attaining the high information ratios possible in hedge funds. The same argument says that the constraints become more binding at higher levels of active risk, so that the information ratio declines with active risk. In order to maintain a reasonable information ratio, long-only managers chose relatively low active risk. In contrast, less constrained hedge fund managers with similar skill can sustain their higher information ratios at higher levels of risk.

Obviously, we can use equation (10) to compare expected fees across active long-only managers. This is a special case of comparing expected fees across long-only and hedge fund managers where $p_h = 0$. Miller (2007) assesses the fees for active management by long-only managers. He decomposes each fund's total portfolio into an actively managed part and a passively indexed part. He argues that, for many domestic U.S. mutual funds, only about 15 to 20% of holdings are active. The remainders of the fund portfolios are invested in the benchmarks. Miller then chooses to express the fees as a fraction of the actively managed assets. Based on this analysis, one might conclude that, for two long-only funds with similar fixed fees, the fund with a much higher level of active management offers a much better deal. If the more active long-only manager has much lower skill, however, this conclusion is likely to be misleading. Clarke, de Silva, and Thorley (2002) argue that, for long-only managers, information ratios are likely to fall with active risk. As a result, fees as a fraction of actively managed assets appear to be a poor proxy for fees as a fraction of alpha.[7]

Equation (10) shows the equivalent fixed fee, f_l. This is probably the easiest way to think about fees when we compare a long-only fund and a hedge fund or a long-only fund and a short-extension fund. If we compare two funds with incentive fees, however, neither fund charges just fixed fees. In this case, we can proceed in one of two ways. Either, we can compute the equivalent fixed fee of a fictitious long-only fund and compare the two hedge funds to this long-only fund. Or, we can directly compare the net-of-fees alpha we expect from each hedge fund, as described in equation (2) or (3).

Using equation (10) for the equivalent fixed fees, we can use relatively simple calculations to explore the equivalent fees as a function of the performance char-

[7] Cohen and Stirton (2006) use the method and findings of Miller (2007) to argue that hedge funds offer lower fees for alpha than long-only funds.

acteristics for long-only and hedge fund strategies. I prefer to summarize this algebra graphically.

One way to compare hedge fund fees and fixed fees is to fix the characteristics of the long-only fund and explore how different hedge fund characteristics influence the equivalent fixed fee. As previously mentioned, I keep the hedge fund fees constant at a fixed fee of 1% of assets and a variable fee of 20% of profits. That leaves variations in the hedge fund's information ratio and active risk. Figure 1 explores how variations in these two hedge fund characteristics affect the equivalent long-only fees.

Figure 1 shows the equivalent fees for a variety of hedge funds and two successful long-only funds. Panel A shows the fixed fees a long-only fund must charge in order to match the hedge fund fees as a fraction of alpha when the long-only fund has active risk of 3% and an information ratio of 0.4. In the figure, the hedge fund becomes more attractive as active risk and *IR* rise as we move to the right and up. As its expected performance improves, the hedge fund charges smaller fractions of alpha in fees. Since the figure holds the performance of the long-only fund fixed, the long-only fund must charge smaller fees as the hedge fund becomes more attractive in order to remain competitive.

The figure quantifies what levels of long-only fees represent the same fraction of alpha for different hedge fund "competitors". For example, if a hedge fund has active risk of 6% and information ratio of 1, the equivalent long-only fees are just under 45bps. For a hedge fund with active risk of 6% and information ratio of 1.6, the equivalent fixed fees are about 35bps. Contrary to rhetoric surrounding the supposedly exorbitant hedge fund fees, for hedge funds with relatively high active risk and high information ratios, the fees as a fraction of alpha are probably similar to – and possibly lower than – what successful long-only funds charge.

The figure also shows that hedge funds with low *IR*s or very low active risk charge very high fees by the standards of skilled long-only managers. A hedge fund with active risk of 3% and *IR* of 0.4 charges the same fraction of alpha as a long-only fund with the same risk and *IR* if the long-only fees are just over 120bps. At this level, the equivalent fixed fee exceeds the total alpha of 120bps. Neither the hedge fund nor the long-only fund can operate with these fees and performance characteristics. Of course, this says more about the fact that investors should not invest in hedge funds with low risk, low *IR*, and standard hedge fund fees than it does about the level of fees charged by hedge funds in general.

Panel B of figure 1 shows the same analysis for a long-only fund with a tracking error of 4% and *IR* of 0.6. A long-only fund with these attributes has excellent performance among long-only funds. Of course, as alpha rises with tracking error and *IR*, a given fixed fee amounts to a smaller fraction of alpha. In order to match the hedge fund fees as a fraction of alpha, this long-only fund must charge higher fees than the long-only fund in panel A. Even for a highly-successful long-only fund, however, the fixed fees that charge the same fraction of alpha as hedge fund fees seem quite reasonable compared to the fees actually charged by long-only funds. To match the fees of a hedge fund with tracking error of

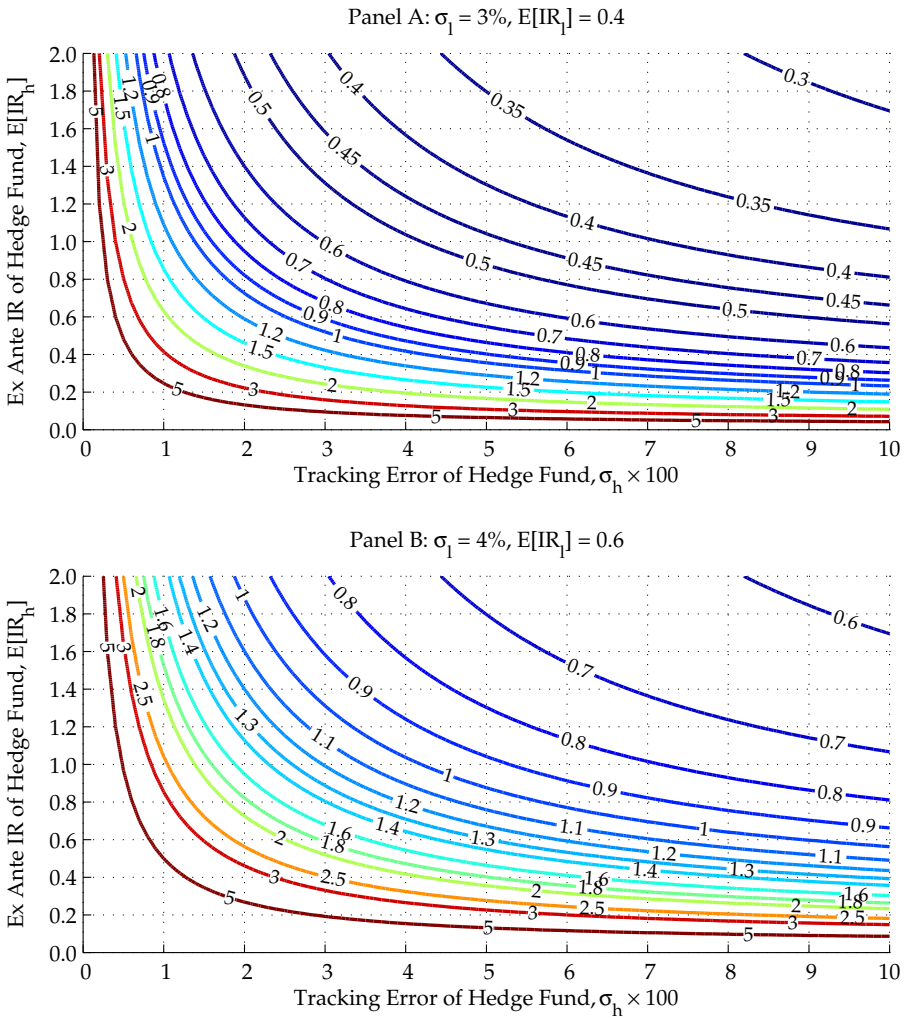

FIGURE 1: EQUIVALENT FIXED FEES GIVEN LONG-ONLY FUND CHARACTERISTICS

The figure shows the fixed fees f_l a traditional long-only manager must charge to match the hedge fund fees as a fraction of expected alpha,

$$f_l = f_h(1-p_h) + p_h\, E\big[\max\{IR_h\,\sigma_h, f_h\}\big]\,\frac{E[IR_l]}{E[IR_h]}\,\frac{\sigma_l}{\sigma_h}. \tag{10}$$

Panel A assumes that the long-only manager has active risk $\sigma_l = 3\%$ and an information ratio $IR_l = 0.4$. Panel B assumes that the long-only manager has active risk $\sigma_l = 4\%$ and an information ratio $IR_l = 0.6$. Both panels assume that the hedge fund manager charges a fixed fee $f_h = 1\%$ of assets and a profit-sharing rate $p_h = 20\%$. The figure assumes that $IR_h \sim N(E[IR_h], 1)$ and that σ_h is known.

6% and *IR* equal to 1, the long-only fund in Panel B charges about 85bps. That's nearly twice the fee compared to panel A, but certainly within the range of fees that successful long-only funds charge in practice.

I have highlighted fee comparisons for a few specific values of alpha. Obviously, the graphs also can be used to explore what range of alpha a hedge fund

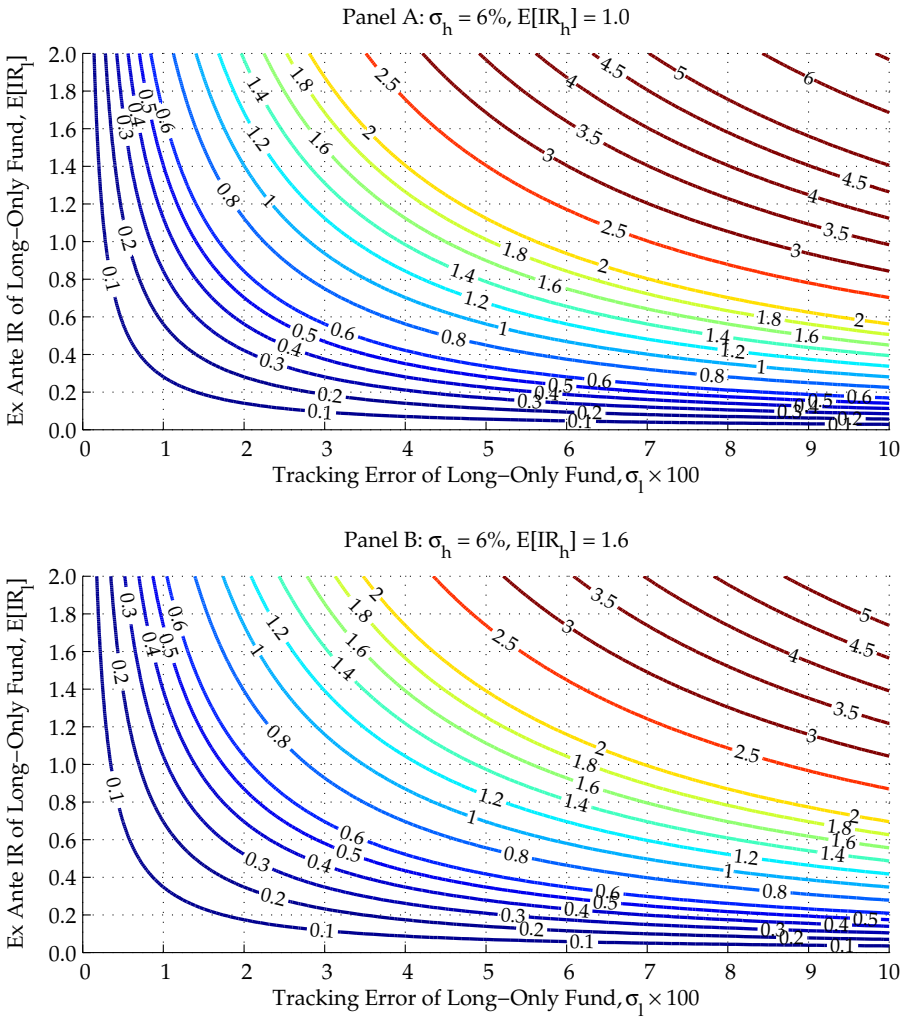

FIGURE 2: EQUIVALENT FIXED FEES GIVEN HEDGE FUND CHARACTERISTICS

The figure shows the fixed fees f_l a traditional long-only manager must charge to match the hedge fund fees as a fraction of expected alpha,

$$f_l = f_h(1 - p_h) + p_h\, E\big[\max\{IR_h\,\sigma_h, f_h\}\big]\,\frac{E[IR_l]}{E[IR_h]}\,\frac{\sigma_l}{\sigma_h}. \tag{10}$$

Panel A assumes that the hedge fund manager has active risk $\sigma_h = 6\%$ and an information ratio $IR_h = 1.0$. Panel B assumes that the hedge fund manager has active risk $\sigma_h = 6\%$ and an information ratio $IR_h = 1.6$. Both panels assume that the hedge fund manager charges a fixed fee $f_h = 1\%$ of assets and a profit-sharing rate $p_h = 20\%$.The figure assumes that $IR_h \sim N(E[IR_h], 1)$ and that σ_h is known.

has to produce in order to justify its fees relative to a long-only fund with particular characteristics. Since we rarely *know* these characteristics, the sensitivity analysis incorporated into the graphs is probably just as valuable as the "point estimates" highlighted in the discussion so far. For example, panel B of figure 1 shows that a hedge fund with expected volatility of 6% and *IR* of 1.6 has sub-

stantial room to miss those targets before it becomes more expensive than a long-only fund with active risk of 4%, *IR* of 0.6, and a fixed fee of 80bps.

Figure 2 explores the equivalence of expected fees by varying the tracking error and *IR* of the long-only fund and fixing the characteristics of the hedge fund instead. Here, the long-only fund becomes more attractive as we move to the right and up. As the long-only fund becomes more attractive, naturally it can charge higher and higher fixed fees and still remain competitive with the hedge fund, whose performance and fees are held fixed.

In panel A, the figure shows this comparison for a hedge fund with active risk of 6% and *IR* of 1. In order to drive the expected equivalent long-only fee above 100bps, the long-only fund has to have substantial active risk or – by the standards of long-only funds – a high information ratio.

Panel B uses a hedge fund with active risk of 6% and *IR* of 1.6. For such a hedge fund, the expected alpha is almost 10% per year. Although the expected hedge fund performance is markedly better than in panel A, the equivalent long-only fees are only slightly lower. As in panel A, the hedge fund is likely to retain a lower fraction of alpha than long-only funds with low information ratios but a higher fraction than excellent long-only funds with high information ratios.

Based on these results, we can readily compare the fees of any two fund managers we consider substitute sources of alpha. Of course, it would be interesting to see how representative long-only and hedge fund managers compare based on this analysis. Unfortunately, the publicly available data on performance and fees for large cross-sections of hedge funds appear unreliable. Hedge fund performance is generally reported voluntarily and may suffer from substantial reporting biases. If these input data are biased, of course the conclusions based on them would inherit these biases.

The arguments that good hedge funds with good performance fee schedules charge similar fractions of alpha as good long-only funds starkly contradicts the frequently voiced opinion that hedge fund fees are very high. There are at least two reasons why people might consider hedge fund fees high.

One reason for the wide-spread notion that hedge fund fees are high may be the fact that, for most levels of expected performance, the typical hedge fund fee schedule retains a higher fraction of alpha than a fixed fee schedule with f_l = 1000bps, for example. This is demonstrated graphically in figure 3. In panel A, the figure shows the fraction of alpha retained by a hedge fund; in panel B, the figure shows the fraction of alpha retained by a long-only fund charging f_l = 100bps.

The long-only fee of 100bps is convenient, not necessarily representative. The fraction of alpha retained by fixe fee arrangements is proportional to the fixed fee. Hence, a fee of 150bps retains one-and-a-half times as much alpha as shown in panel B; a fee of 50bps retains half as much alpha as shown in panel B.

The fallacy in this comparison is that a manager with a given level of skill should be able to achieve a higher information ratio and higher tracking error in the less constrained hedge fund than in a long-only fund. As a result, it seems nearly certain that we will gernally compare a point in panel B with a point to

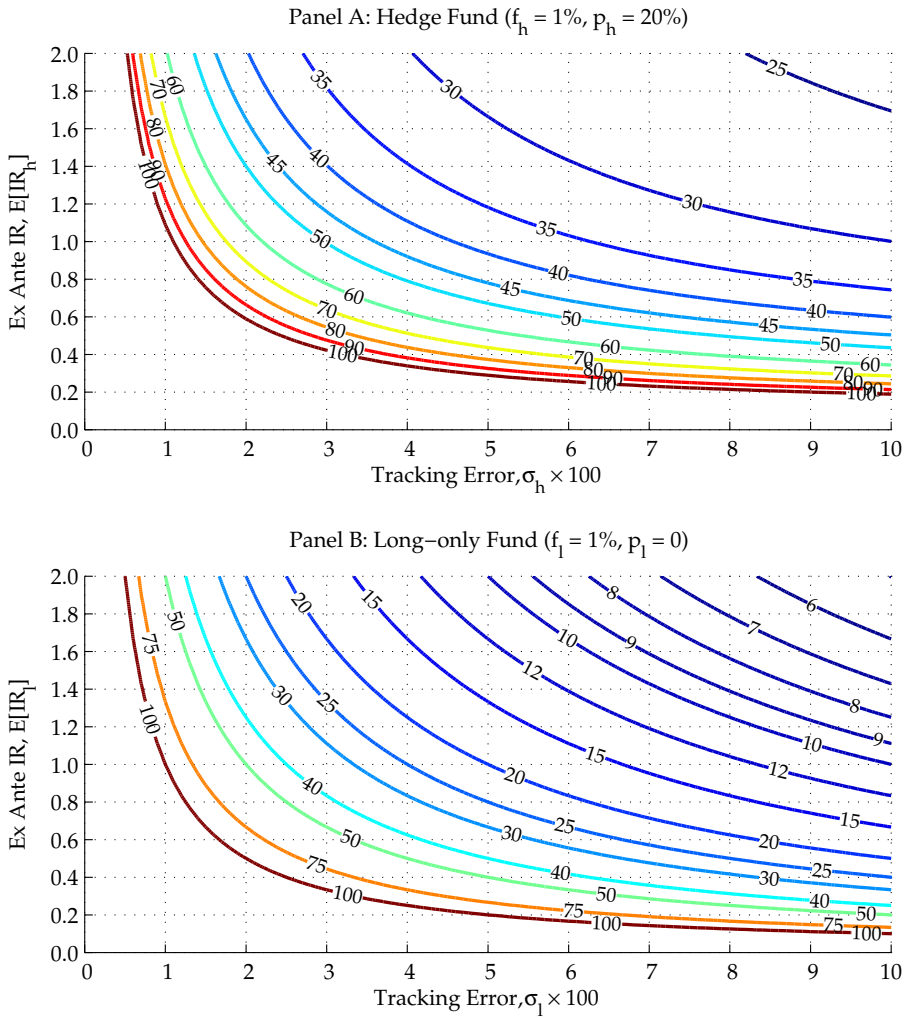

FIGURE 3: PERCENTAGE OF ALPHA RETAINED BY FUND MANAGERS

The figure shows the expected fees the manager charges as a fraction of expected alpha,

$$\theta \equiv \frac{E[\phi(\alpha)]}{E[\alpha]} = \frac{f(1-p) + p\,E\big[\max\{IR\,\sigma, f\}\big]}{E[IR]\,\sigma}. \tag{4}$$

The figure shows contour lines for $100 \times \theta$. The calculation of the expected performance fees assumes that $IR \sim N(E[IR], 1)$ and that σ is known.
Panel A shows results for a hedge fund with fixed fees $f_h = 1\%$ and performance fees $p_h = 20\%$.
Panel B shows results for a long-only fund with $f_l = 1\%$ and no performance fees.

the right and up in panel A. Once we recognize that hedge funds should have higher performance, we can reconcile the unrealistic fee comparisons suggested by figure 3 with the previous analysis.

Another reason why many consider hedge fund fees to be high may be that

fees from poorly constructed hedge fund fee schedules are very large. Some managers obviously charge higher fees than than the 1-and-20 I have considered. Furthermore, not considering the fixed fee when calculating the performance fee awards a "2-and-20" manager more than 40 basis points extra per year. Similarly, paying performance fees on total returns instead of returns in excess of a benchmark gives a hedge fund manager an additional 20% of the benchmark return. If risk-free interest rates are 5% this amounts to 100 basis points per year for a market-neutral hedge fund manager. Finally, having a very short or no claw-back period, rewards hedge fund managers for volatility even if they produce basically no alpha. Failing to reduce compensation by paying attention to all four of these features can result in very high compensation for hedge fund managers.

While hedge fund managers naturally would like to negotiate high compensation, their ability to do so presumably is predicated on exceptional demand for their services. As hedge funds continue to proliferate and hedge fund clients become more sophisticated, competition may reduce the fees that the most expensive hedge funds earn as a fraction of alpha. Even in a stable, long-term equilibrium, however, some managers may retain a larger fraction of alpha. For example, larger alpha may be inherently more valuable. Although we can increase alpha through leverage, this is not free. Hence managers with larger alpha may retain a larger fraction of their alpha.

The spectacular growth in assets invested in hedge fund strategies strongly suggests that hedge fund fees are not vastly higher than long-only fees. If hedge funds charged a much higher price for alpha than long-only funds, investors would not shift as many assets from long-only to hedge fund stratgies.

3 Conclusion

The paper argues that, for actively managed investment funds, an important measure of cost is fees as a fraction of alpha. Although fees are typically stated as a fraction of assets, investors pay active managers for alpha. Expressing the fees as a fraction of alpha permits an appropriate comparison of fees across active managers.

A careful analysis of hedge fund fees reveals that, at a given level of performance, hedge fund managers retain a larger fraction of alpha than long-only managers. At the same time, a skilled hedge fund manager with a well-structured fee schedule probably retains a similar fraction of alpha as a similarly skilled long-only manager because the hedge fund manager should deliver higher alpha. Since hedge funds operate under fewer constraints on their investments, it is likely that a skilled hedge fund manager has higher active risk *and* a higher information ratio than a similarly skilled long-only manager. The associated increase in alpha relative to long-only funds roughly matches the higher fees relative to long-only managers.

Because precise statistics for fees and performance by hedge funds are hard to find, the analysis cannot rule out that typical hedge funds recently may have charged higher fractions of alpha than long-only managers with excellent performance. In the analysis presented here, a hedge fund manager who charges

canonical hedge fund fees but delivers alpha similar to a successful long-only manager charges substantially higher fees for alpha than the long-only manager. Moreover, if a hedge fund manager charges higher fixed or performance fees than I have considered here, charges performance fees for returns above zero, does not have a claw-back provision for the performance fees, or does not exclude the fixed fee from performance, the total fees can be substantially higher than those charged by a long-only manager with good performance.

Finally, fund managers who charge roughly similar fractions of alpha for all of their strategies, have limited incentives to allocate alpha capacity to their hedge funds instead of their long-only strategies. The examples in the paper show that skilled managers with well-designed hedge fund fee structures probably do not face large conflicts of interest on this front. Of course, for particular managers and fee arrangements, there could be large differences in fees as a fraction of alpha. The paper shows how to assess the fees and detect these kinds of conflicts.

References

ACKERMANN, CARL, RICHARD MCENALLY, AND DAVID RAVENSCRAFT, 1999, "The performance of hedge funds: Risk, return, and incentives." *Journal of Finance* 54, 833–874.

ASNESS, CLIFFORD, 2004a, "An alternative future." *Journal of Portfolio Management*, 94–103.

ASNESS, CLIFFORD, 2004b, "An alternative future: Part II." *Journal of Portfolio Management* Fall, 8–23.

CLARKE, ROGER, HARINDRA DE SILVA, AND STEVEN THORLEY, 2002, "Portfolio constraints and the fundamental law of active management." *Financial Analysts Journal* 58, no. 5, 48–66.

COHEN, RANDOLPH B. AND KERRY J. STIRTON, 2006, "Are hedge fund fees a bargain? And other conundrums of balancing active and passive management." *The NMS Exchange* 7, 2.

ENNIS, RICHARD M., 2005, "Are active management fees too high?" *Financial Analysts Journal* 61, 44–51.

FRENCH, KENNETH R., 2008, "The zero sum game." Presidential Address, American Finance Association, New Orleans, LA.

FUNG, WILLIAM AND DAVID A. HSIEH, 1997, "Empirical characteristics of dynamic trading strategies: The case of hedge funds." *Review of Financial Studies* 10, 275–302.

FUNG, WILLIAM AND DAVID A. HSIEH, 2001, "The risk in hedge fund strategies: Theory and evidence from trend followers." *Review of Financial Studies* 14, 313–341.

GOETZMANN, WILLIAM N., JONATHAN E. INGERSOLL, JR., AND STEPHEN A. ROSS, 2003, "High-water marks and hedge fund management contracts." *Journal of Finance* 58, 1685–1717.

JACOBS, BRUCE I. AND KENNETH N. LEVY, 1998, "On the optimality of long/short strategies." *Financial Analysts Journal* March/April, 40–51.

KAHN, RONALD D., MATTHEW H. SCANLAN, AND LAURENCE B. SIEGEL, 2006, "Five myths about fees." *Journal of Portfolio Management* 32, 56–64.

MILLER, ROSS M., 2007, "Measuring the true cost of active management by mutual funds." *Journal of Investment Management* 5, 29–49.