

---

# Delegated portfolio management: Are hedge fund fees too high?

**Francois-Serge Lhabitant**

Ecole des HEC, University of Lausanne, 1015 Dorigny, Switzerland.  
Tel: +41 79 4381753, E-mail: f@lhabitant.net

*Received (in revised form): 5th April, 2007*

---

**Francois-Serge Lhabitant** is the Chief Investment Officer at Kedge Capital. He is a professor of finance at HEC Lausanne and at EDHEC, a visiting professor at Hong Kong University of Science and Technology, and a member of the Scientific Council of the Autorité des Marchés Financiers, the French regulatory body. The views expressed in this paper are solely those of the author.

---

## Practical applications

Hedge funds are often criticised for the high level of their fees compared to mutual funds. The reality is that (i) when properly calibrated, performance fees are a useful tool to attract talented managers and give them an incentive to perform, and (ii) hedge funds often charge less for active management than traditional mutual funds.

## Abstract

*Mutual fund investors just beginning to venture into alternative investments usually find the level of fees overwhelming, and may be tempted to dismiss the hedge fund industry. In this paper, we discuss the pros and cons of asset-based fees versus performance-based fees. We also compare the fees for true active management charged by traditional and alternative asset managers, and show that hedge funds are often less expensive than mutual funds.*

*Journal of Derivatives & Hedge Funds* (2007) **13**, 220–232. doi:10.1057/palgrave.jdhf.1850067

**Keywords:** hedge funds; management fees; portfolio management; compensation contracts; performance fees; alpha

## INTRODUCTION

The emergence of quantitative asset allocation tools and the growing sophistication of financial

instruments and strategies have convinced many, if not most, investors to delegate the management of their portfolios to investment professionals. As a consequence, the past 30 years have witnessed an increased separation between the ownership and the control of financial wealth.

Initially, actively managed funds took the lead. They intermediated most of the consumers' investments in financial securities and rapidly became the largest financial intermediary in the US. Their dismal average performance, however, provided more general evidence of just how difficult it is to consistently beat the market. It also opened the way for passive strategies and indexed funds, which were then perceived as a cost-effective way of buying equity market exposure — a strategy that made sense in an environment of rapidly rising market valuations. But the end of the technology bubble in 2000

**Journal of Derivatives  
& Hedge Funds,**  
Vol. 13 No. 3, 2007,  
pp. 220–232  
© 2007 Palgrave  
Macmillan Ltd  
1753-9641 \$30.00

---

and the subsequent bear market significantly froze the development of passive funds and provoked interest in alternative investments, such as hedge funds and private equity funds. Since then, the number of highly specialised, non-traditional asset management firms has been growing exponentially. Not surprisingly, many of them are born from the ashes of the failures of mainstream mutual fund managers.

### **DELEGATED PORTFOLIO MANAGEMENT: A PRINCIPAL-AGENT GAME**

Whatever the investment vehicle and investment strategy, it is tempting to consider the delegation of portfolio management as a particular case of a principal-agent game. The investor (the principal) engages a fund manager (the agent) and pays him a fee to perform financial services on his behalf, that is to invest financial assets in a pre-specified manner. The agent receives some broad guidelines regarding trading investment objectives and risk tolerance, but the details of the implementation — which securities to buy or sell, which brokers to use, how often to trade, etc — are left to the agent.

Agents have a fiduciary duty to look after the interests of their funds and their investors. Nevertheless, in economics, such a principal-agent game is well known for being the potential source of a series of agency problems — see for instance the seminal work of Jensen and Meckling.<sup>1</sup> Let us mention briefly some of them.

— *Adverse selection*: Agents usually have much better information than principals about their real skills. Charlatans might attempt to profit for this asymmetry of information,

pretend to be skilful portfolio managers and extract fees. Investors will ultimately realise the poor quality of their agents, but this might be too late.

- *Moral hazard*: Agents may acquire superior private information and therefore deliver better results than their principal acting alone. Agents should, however, not necessarily be trusted to use this information in the principal's best interest. They may also use their discretion to benefit themselves personally in a variety of ways. As an illustration, Chevalier and Ellison<sup>2</sup> show that career concerns of younger portfolio managers cause them to be more risk averse in selecting their fund's portfolios. In particular, younger managers tend to take on lower unsystematic risk and deviate less from the typical behaviour than their older counterparts. Intuitively, this problem should be larger when the agent's actions are more difficult to observe.
- *External factors*: Most of the time, the final outcome of the principal's portfolio does not depend only on the agent's effort, but also on environmental or market factors which are outside his control. Principals should take this into account when analysing or rewarding agents.
- *Fiduciary conflict*: Managers who successfully add value will also attract more assets to increase their fees; but with increased assets, their ability to add value may decrease.

If delegated portfolio management was just a simple principal-agent game, these problems would be easily eliminated by continuously monitoring the agents' trades and the portfolio content. In practice, however, continuous monitoring is difficult to implement and rather

---

costly. Moreover, most portfolio managers disagree with the idea of being continuously scrutinised, particularly if they are engaged in illiquid securities and/or short positions, as disclosing their holdings could threaten their performance. Hedge funds, for instance, are rather secretive and only a few of them — not necessarily the wish-list ones — are willing to offer managed accounts at additional cost. By comparison, mutual funds are usually forced to provide more transparency, but only at specific occasions (eg in their quarterly reports), which opens the door to window dressing.<sup>3</sup>

## INCENTIVE PROGRAMMES

A simple solution to reduce agency costs in delegated portfolio management is incentive compensation. That is, principals (investors) should give agents (portfolio managers) the right series of incentives in order to align their respective interests.

What are these optimal incentives? The answer is not straightforward, because delegated portfolio management is far more complex than usual principal–agent games. First, delegated portfolio management involves information acquisition rather than just measuring *ex post* performance. Indeed, the agent must deploy some effort in order to receive noisy information signals, and subsequently take an *unobservable* action based on the realisation of these signals. Secondly, agents can also control the scale of their response to signals, which means they can effectively influence both the level and the variance of his portfolio returns. By contrast, in a typical agency problem, agents control either the return or the variance of their ‘portfolio’, but not both. Thirdly, agents’ responses to the signal are not necessarily linear, which makes the

determination of a *generally optimal* contract for the principal very difficult.

Nevertheless, the agency literature has already investigated the properties of several specific incentive contracts. The consensus seems to be that a good contract should serve at least three main purposes:

- It should affect the portfolio selection of the agent by providing him the incentives to expend efforts and learn about the observed signals, and therefore, to improve the distribution of returns.
- It should create some sort of risk sharing between the principal and the agent, and therefore reduce the agent’s incentive to take inappropriate risks in order to increase his expected fees.<sup>4</sup>
- It should also send a signal to the market about the type and quality of agents willing to participate in the game. Technically, a compensation contract is said to be ‘separating’ if it reveals the type of agents willing to accept it, and ‘pooling’ otherwise.

The agency literature has also evidenced that specific incentive contracts were optimal in particular theoretical environments. For instance, if the principal is risk averse and the agent is risk neutral, the principal may request a flat payment by the agent and let him be the residual claimant of the contract. Such a contract would obviously discourage non-skilled agents from entering the contract, and at the same time, provides the best incentives to the agent for expending costly efforts to acquire information. Moreover, such a contract is also optimal for the principal from the standpoint of risk minimisation.

---

The problem is that assuming risk-neutral agents is not very realistic. Unfortunately, if agents are risk-averse and only have limited access to credit, then the situation becomes much more complex. There is an obvious trade-off between inducing effort (which requires the agent to be exposed to the risky outcome) and providing insurance (which goes in the opposite direction). Nevertheless, under reasonably general assumptions, one can show that a linear sharing rule is an effective way to reach an optimal trade-off between risk-sharing and effort inducement.<sup>5</sup> Hence, from a theoretical perspective, portfolio management contracts should have a linear form in which the agent is paid a flat fee plus a share of the outcome, possibly defined in terms of a spread against a certain benchmark value.<sup>6</sup> The share should be optimally set taking into account the relative risk aversion of the principal and the agent, as well as the need to motivate the agent to undertake costly effort.

## **TRADITIONAL VERSUS ALTERNATIVE COMPENSATION CONTRACTS**

Which types of fees are being charged in practice for delegated portfolio management? Empirical evidence seems to suggest that traditional and alternative asset managers have taken diametrically opposed routes.

Traditional investment managers are monitored and evaluated against an appropriate style benchmark, but their compensation is usually not explicitly linked to their relative performance. Rather, they charge a management fee that is generally expressed as a fixed percentage of the assets of their fund. The level of this management fee varies depending upon the complexity of the strategy and the asset

class considered, but is typically between 1 and 3 per cent per annum. As an illustration, Liang<sup>7</sup> calculated the average annual management fee for hedge funds to be 1.36 per cent, with a median of 1 per cent. This base fee proved to be much smaller than total management fees surveyed from retail mutual funds. This would indicate that hedge fund managers are getting paid much less to show up for work. The rest of their compensation only comes as they produce returns.

By contrast, alternative asset managers target an absolute performance and charge both a management fee and an incentive fee. Anecdotal evidence suggests that for most hedge funds, the management fee is roughly equal to operating costs, that is 1 to 2 per cent of the assets under management.

The incentive fee is based on the fund's overall performance and typically represents 20 per cent of profits. In most cases, there is a high watermark — any prior losses must be repaid before the fund manager is eligible to receive any incentive income. Some funds may also implement a hurdle rate, that is a level of performance that must be met before incentive fees can be earned. The hurdle may be an absolute return figure (say 5 per cent p.a.), a reference index (the S&P performance), or an amount considered being equivalent to the risk-free rate (ie Treasury bill rates). According to Liang, the existence of a high watermark is more critical than the hurdle rate. Funds with a high watermark outperformed the funds without a high water mark by a significant level of 6 per cent, while funds with hurdle rates and those without hurdle rates were similar in terms of performance.

Over the recent years, asset-based fees were subject to highly competitive pressures and

---

declined significantly, particularly in the traditional world. This is not surprising, as investors have the option of shifting their assets quickly to another asset manager or investment vehicle if they identify a better opportunity. By contrast, the alternative asset management industry exhibits some serious dichotomy. On the one hand, wish-list hedge funds managers have increased their fee levels,<sup>8</sup> enforced lockups and/or soften their high watermark clauses.<sup>9</sup> On the other hand, start-up hedge funds starving for seed capital are willing to offer large discounts on fees and/or significant retro-cessions in exchange for early investors.

## **ASSET-BASED FEES VERSUS INCENTIVE FEES**

At this stage, one may wonder which of the two models, asset-based or incentive fees, is preferable to reduce the agency costs of portfolio management delegation. Once again, the answer is not straightforward.

It is obvious that asset-based fees offer only limited indirect incentives to managers — as assets grow, due to capital inflows or the appreciation of the underlying holdings, the fee collected will grow in tandem. Several empirical academic studies<sup>10</sup> have confirmed the positive relationship that exists between a fund's relative performance and subsequent inflow of new investments as well as the fact that some investment funds voluntarily waive their stated fees in an attempt to boost net performance and, thereby, to attract additional assets. Academic research, however, has also evidenced the asymmetric nature of the relationship between fund flow and performance. That is, while superior relative performance generates an increase in the growth of assets under

management and, in turn, managerial compensation, there tends to be no symmetric outflow of funds in response to poor relative performance, at least over the short term. This asymmetry creates an incentive for fund managers to increase risk taking, especially after poor performance, as the downside is limited compared to the upside.

Another essential question with using only asset-based fees is the scalability of the strategy. In the case of skill-based and capacity constrained investments, adding new assets may harm the interests of existing investors. Nevertheless, managers may still attempt to grow, just because they are rewarded essentially on the basis of their assets under management. The effective incentive of a pure asset-based fee therefore needs to be carefully assessed on a case-by-case basis.

By contrast, performance fees seem to do a good job at aligning the interests of managers (desire for high fees) and those of investors (desire for high excess returns). When rewarded by a performance fee, a manager will sell his strategy only up to the asset capacity for which it was designed. Then, he will close his fund to additional investments, as he has stronger incentives for performance than for asset growth. Adding too much assets means being forced to put some money into second-best ideas, and these ideas do not often deliver the kind of returns desired, so asset growth is *de facto* limited. At some point, managers may even have to repay back some capital. In this context, any increase in revenues should primarily come from improving the excess returns delivered to investors rather than by increasing the assets under management.

Performance fees, however, also have drawbacks. The most important ones are linked

---

to their asymmetric nature, that is the manager participates in the upside, but not in the downside. In a sense, this corresponds to a (potentially) perpetual call option with a path-dependent payoff — the payoff at any time depends on the high-water mark, which is related to the maximum asset value achieved. This option-like payoff structure may lead to possible adverse incentive effects, because the manager simultaneously owns the option and controls its underlying asset (the portfolio) as well as its volatility. For instance, towards the end of an evaluation period, underperforming managers may decide to increase portfolio risk in order to increase the value of their option and gamble for resurrection — see Carpenter.<sup>11</sup> On the contrary, outperforming managers may attempt to lock-in their positive performance and dampen portfolio volatility. Last but not least, some fund managers may also attempt to improve their portfolios by window dressing them, for example by using stale prices rather than real market values (or vice versa) for illiquid stocks or non-traded assets around the end of an evaluation period. Given the lack of agreed-upon standards, different views about illiquid marks, and moral hazard, valuation can be akin to numerical quicksand.

Another important element with performance fees is their accrual and crystallisation. The frequency at which performance fees are crystallised (ie will be paid) as opposed to being accrued can have important implications for a fund manager behaviour. For instance, annual crystallisation of performance fees represents a smoothing mechanism that is usually beneficial to investors, as it removed the distortions due to short-term volatility in the underlying investments. Some regulators (eg Hong Kong) have prescribed it, others are

considering it. However, it also implies using some sort of equalisation mechanism to ensure fair treatment of all investors during a period of losses (and in particular that new investors pay a performance fee if the next asset value increases while old investors are exempt as long as they recover from previous losses). As a consequence, the effective incentives of a pure performance-based fee as well as its administrative implications needs to be carefully assessed on a case-by-case basis.

Note that although mutual funds and hedge funds seem to disagree on the type of fees to charge to their external investors, they both agree on their own *internal* compensation. In particular, in both mutual funds and hedge funds, non-partners portfolio managers and senior analysts receive a fixed base salary topped by bonuses — the latter is partially or entirely based on performance. In the recent years, a significant trend has been observed towards lesser reliance on base salaries and greater reliance on incentive bonuses for compensation, following similar trends in trading houses with which mutual fund companies often compete for fund management talent.

This should always be kept in mind and a complete discussion on incentives fees should consider at least two layers of possible agency problems: the agency relationship between the fund company and the fund investors, but also the agency relationship between the fund company and fund management — see Chevalier and Ellison.<sup>12</sup>

## THE REGULATORY VIEW

Another interesting viewpoint on asset management fees is that of regulators, although it usually only affects traditional asset managers —

---

most alternative asset managers are still largely unregulated. In the US, for example, regulators wanted to preclude investment advisers from subjecting client funds and securities to unnecessary speculation in order to increase their fees. Their argument was that:

(i) investment advisers essentially hold an option that gives them the right to exchange a fraction of their client's portfolio for the benchmark portfolio; and (ii) the value of this option can easily be increased by widening the spread between the standard deviations of the two portfolios.<sup>13</sup> Consequently, registered investment advisers — and therefore, mutual funds — are prohibited by the Section 205(a)(1) of the 1940 Investment Advisers Act to charge performance fees.

The only exception is performance-based fees of the 'fulcrum' type, that is the compensation must be symmetric around a chosen index, decreasing for underperforming the index in the same way as it increases for outperforming it.<sup>14</sup> Fulcrum fees, however, do not seem very popular — according to the Lipper database, less than 2 per cent of the US equity mutual funds apply a fulcrum performance fee. As one could expect, many fund managers are perfectly happy to sell their funds to the public on the grounds that it can beat the market, but very few of them are willing to put their own money where their mouths are and take the other side of the bet.

In Europe, a European Council Directive sets the general legal framework within which undertakings for collective investment in transferable securities (UCITS) may carry on their business. It establishes that 'the law or the fund rules must prescribe the remuneration and the expenditure which a management company is empowered to charge to a unit trust and the method of calculation of such remuneration'.

Therefore, legal restrictions to the way companies managing mutual funds can be compensated for their services, if any, are to be found only at the national level. Several countries, such as Spain, France, or the UK, have left a large degree of latitude when it comes to portfolio managers deciding on the mechanism and the value of their compensation. Strikingly, in practice, even though it is legally permissible, most mutual fund companies are almost never compensated through incentive contracts. Instead, they are paid a fixed percentage of assets under management. At the other extreme, hedge funds and other lightly regulated private investments companies are still primarily charging incentive fees.

## THE SOFT DOLLAR ARRANGEMENTS

Our discussion of asset management fees would not be complete if we did not mention the question of 'soft dollars'. Soft dollars are the result of a popular arrangement between a fund and its broker. Basically, the fund manager agrees to place a designated dollar value of trading commission business with a given broker over a given period of time. In exchange for this promise, the broker provides the manager with research credits equal to some part, say 50 per cent, of the promised commissions. Rather than rebating these credits back to investors, the manager keeps them and uses them to buy any of the large number of broker-approved research products (hardware, software, subscriptions, databases, etc) supplied by third-party research vendors. The broker then pays the manager's research bill and simultaneously cancels the appropriate number of credits from the manager's soft dollar account.

---

From a functional perspective, soft dollars are simply one form of bundling research and execution together into a single commission payment. They are unique in allowing research and execution to be provided by entirely separate firms, thereby promoting vertical disintegration of the research and execution functions.

Do soft dollars reduce or increase agency costs of delegated portfolio management? Both views are defensible. On the one hand, one may argue that soft dollars allow managers to misappropriate investor's wealth by churning their portfolios to subsidise research for which they should pay directly. This, in turn, generates various inefficiencies, such as the choice of a broker for his willingness to provide research credits rather than on expected execution quality. At the end of the day, because brokerage commissions are included in the price basis of the underlying security, investors implicitly pay the underlying research costs. Soft dollars, therefore, subsidise the manager's use of research inputs, and in some cases the existence or amount of the subsidy is unknown to investors. Thus, portfolio managers shift expenses that are normally shouldered by them onto fund shareholders.

But on the other hand, one may also argue that soft dollars are aligning the interests of asset managers with those of their investors. Fund managers typically own a very small percentage of their portfolio, directly as co-investors or via an annual management fee. If managers were required to pay for all research and execution out of their own pockets, they would bear a disproportionate share of the costs of generating portfolio returns in relation to the private benefits based on their portfolio share. Seen in this light, the agency problem faced by portfolio investors is that in the absence of agreement,

managers will do too little research, identify too few profitable trading opportunities, and execute too few portfolio trades. Thus, soft dollar arrangements allow investors to subsidise investment research and thereby encourage managers to do more of it, which ultimately benefits the portfolio performance. Last but not least, soft dollars may also be unique in aligning the incentives of brokers and managers. When a broker provides soft dollar research credits to a manager, it typically does so in advance of the commission payments it expects from the manager. But the manager has no legal obligation to trade and may in particular terminate the executing broker relationship with the balance of the soft dollar account unpaid. The broker will then lose a stream of commissions that would have included a premium above the cost of providing low-quality brokerage. The threat of termination dramatically increases the expected losses to brokers who provide low-quality services, and may therefore perform an effective quality assuring function.

## **WHAT MAKES A GOOD PERFORMANCE FEE?**

Coming back to the main topic of our discussion, at this stage, we may wonder what should be the key characteristics of a performance fee. In our opinion, a performance fee should be structured to achieve five main objectives.

- Reward a proficient manager for *excess* return earned over a relevant benchmark over a given measurement period. The choice of the benchmark is essential here as it will allow the identification of the returns



---

linked to the benchmark (the beta) and the returns linked to the value added by the manager (the alpha). Beta returns should be (almost) free, while alpha returns are expensive to achieve. Investors should therefore only reward managers for their value added rather than for selecting an inappropriate benchmark.

- Control portfolio risk and avoid giving the managers incentives to reduce or increase the risk of the portfolio just because of the proximity of an incentive fee payment date. Risk adjustments should be driven by market conditions and expectations about the future, not by calendar issues.
- Reduce the economic incentive for the manager to grow the assets under management beyond the level at which the performance fees max out. In fact, performance fees encourage investment firms to run their strategies at an optimal asset level.
- Penalise manager underperformance. Otherwise, portfolio managers receive a free option (a call on their performance fees) and they control simultaneously the risk of the underlying asset. High watermarks are useful with that respect because when a manager does poorly, the client will not owe a performance fee until the underperformance is recouped. Some clients even go one step further and ask for clawbacks — the manager who underperforms in the future will return to the client some percentage of the fees he has already received. Such drastic clauses, however, may also be counter productive and encourage staff departures after a bad year — why work for free when it is so easy to join a new fund?
- Eliminate client misunderstandings and properly frame expectations. Being explicit

enough avoids legal actions whenever there is a dispute. A simple illustration: is the performance fee charged before or after the asset-based fee?

## ARE HEDGE FUND FEES EXAGGERATED?

Not surprisingly, many traditional investors who are just beginning to venture into alternative investments find their levels of fees overwhelming. If the industry standard seems to be 1 per cent for the management fees and 20 per cent for the performance fee, several funds among the largest and top-performing ones are far above that. The list of the top earners in the hedge fund industry is impressive.<sup>15</sup> Interestingly, most of these funds tend to be closed to new investors and are regularly returning capital to their existing investors to limit their size.

Traditional investors' first reaction may be to dismiss the hedge fund industry due to excessive layers of fees. Performance fee structures with 20 per cent carry can work out to be tremendous fees, and immediately prompt the question: 'Does the return justify the fee?' The answer is twofold. First, outsiders invest in a hedge fund because they believe the manager has an expertise that they cannot replicate for themselves, or that replication is too costly. This is a fact to remember when looking at hedge fund fees — you get what you pay for. Secondly, if investors achieve their objectives after expenses, the fees are justified, even if their level is an especially hard pill to swallow. As an illustration, Goetzmann *et al.*<sup>16</sup> use an option approach to calculate the present value of the fees charged by a hedge fund manager and show that the present value of the incentive fees can be

quite high (ie for a volatility of 15 per cent, the fee can be as high as 13 per cent of the assets under management). But if a fund delivers poor performance, it is not worth a low fee; in fact, it is worth no fee at all. Thus, fees should be directly related to providing what the investor wants. Consequently, when evaluating or selecting an investment fund, the fee charged should not be the unique determinant. The investment philosophy and quality and tenure of management are also important considerations, among others.

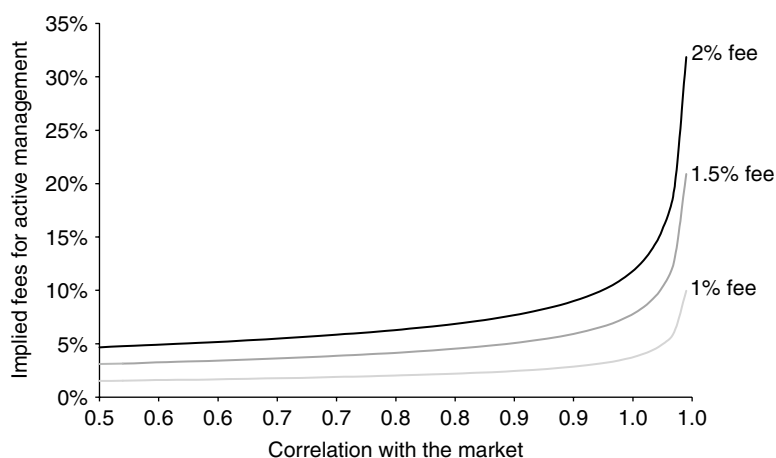
## HOW ABOUT MUTUAL FUND FEES?

By comparison with hedge funds, mutual fund fees look like a bargain. But are they really? Not necessarily, as many mutual funds have engaged to one degree or another in ‘closet’ or ‘shadow’ indexing — charging their investors for active management while providing them with little more than an indexed investment. It is therefore necessary to examine precisely what each mutual

fund does, and in particular to separate its manager skill (alpha) from its market exposure (beta). Alpha refers to the excess return, adjusted for risk, that an active fund manager seeks to add relative to a given market index. Beta represents the risk and return produced by the market index or asset class. Alpha is hard to obtain, and may therefore be expensive, while beta is cheap. In mutual funds, alpha and beta are mixed, and this is usually inefficient. By unbundling them, we can clearly see how mutual fund managers *effectively* charge their clients for their active management.

Since the process of unbundling alpha from beta is technical, we have detailed it in the appendix. The result is a simple formula — see equation (A.9)— that translates the *overall* management fee charged by a mutual fund into the fee effectively charged on the *active* portion of the fund portfolio.

Figure 1 represents the results obtained for three portfolios that would charge a fixed management fee of 1, 2 and 3 per cent p.a.



*Figure 1: Translating the overall management fee of a mutual fund into the effective management fee on the active portion of its portfolio. The cost of running a passive portfolio is set at 10 bps p.a. (which corresponds to the total cost of a large exchange traded fund on the S&P 500)*

---

respectively. A higher correlation between the portfolio and the market means that the portion allocated to the active fund is smaller. As a consequence, the effective fees charged for active management will increase. *As an illustration, a portfolio charging an overall management fee of 2 per cent p.a. and delivering returns with a correlation of 0.95 with the index charges in reality almost 12 per cent p.a. for its active management.* Is this excessive? A hedge fund would have to achieve *consistently* a gross performance of 50 per cent every year to be able to capture such fees using a management fee of 2 per cent and a performance fee of 20 per cent. By contrast, the mutual fund manager has no minimum performance requirement, and his fee is *guaranteed* year after year. Clearly, this strongly supports the unbundling of alpha from beta, as hedge funds are much cheaper at delivering alpha than mutual funds.

### WHY SO MUCH RESISTANCE?

So, in conclusion, are performance-based fees a desirable feature for asset management? One argument often encountered is that poorly performing managers will be paid less and, therefore, benefit the investor. On the other hand, managers who perform well will also be paid more. But since their fund earns more, this extra fee will really not cost anything at all. Perhaps, proponents contend, the carrot of higher fees and the stick of lower ones will make the managers work harder. The objectives of performance fees are to reduce them for flat and negative performance and to reward managers for positive absolute performance.

Structured properly, the performance fee proposition makes a lot of sense for the investor and the manager if added value is properly identified. Then, the client and manager are

simply entering a profit-sharing plan, and profit sharing is effective in aligning incentives. The problem starts when incentives are no longer structured properly, that is, as soon as the client is giving his manager a fee based on something other than added value (the true alpha). This is not sustainable in the long run.

Not surprisingly, many asset managers are still reluctant to use performance fees, and keep fighting such a trend. At the macro level, if the entire industry shifted to performance fees, one should observe a *reduction* of the overall portfolio management fees. But at the micro level, all underperforming asset managers would be paid less, and a portion of the corresponding savings could be used to reward even more the managers that outperform. This is exactly what talented hedge fund managers are pushing for.

### References and Notes

- 1 See Jensen, M.C. and Meckling, W.H. (1976) 'Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure', *Journal of Financial Economics*, Vol. 3, pp. 305–360.
- 2 See Chevalier, J. and Ellison, G. (1999) 'Career Concerns of Mutual Fund Managers', *Quarterly Journal of Economics*, Vol. 114, pp. 389–432.
- 3 Common examples of window dressing include (1) loading up on recently successful stocks such that these winners show up in the top 10 or top 25 holdings; (2) removing 'embarrassing' stocks from the books before reporting; (3) eliminating positions held outside the core investment universe prior to the reporting date to seemingly comply with the stated fund objective; and (4) shifting portfolio positions into less risky securities and thus make the Sharpe ratio of the reported portfolio appear more favourable to the investor.
- 4 Note that hedge fund managers are often constrained by their clients to invest a significant portion of their personal wealth in their fund. This form of risk sharing should have more impact on the alignment of interests, unless they are allowed to hedge against the risk of their own fund.
- 5 See for instance Holmstrom, B. and Milgrom, P. (1987) 'Aggregation and Linearity in the Provision of Intertemporal Incentives', *Econometrica*, Vol. 55,

- pp. 303–328 or Sappington, D. (1991) ‘Incentives in Principal–Agent Relationships’, *Journal of Economic Perspectives*, Vol. 5, pp. 45–66.
- 6 It may be optimal to isolate the agent from the factors on which he has no control, for example by defining a benchmark that captures them, and measuring relative rather than absolute performance. In this way, the principal may save on the remuneration he has to provide to the agent, but he incurs the entire risk of the common shock — if he does not hedge.
  - 7 Liang, B. (1999) ‘On the Performance of Hedge Funds’, *Financial Analysts Journal*, Vol. 55, pp. 72–85.
  - 8 The record is still held by SAC Capital and Renaissance Technologies. SAC returned an average of 20 per cent annually since it launched 17 years ago while charging no management fee and 50 per cent performance fees, and Renaissance returned 30 per cent a year for its Medallion Fund for 19 years beginning in 1988 with fees set at 5 and 44 per cent.
  - 9 As an illustration, Steve Mandel at Lone Pine Capital can charge half of the performance fee (ie 10 per cent) of any gain the fund makes from its low. This 10 per cent performance fee continues until the fund has made up 150 per cent of the drawdown from the previous high, then the standard 20 per cent fee kicks in again.
  - 10 Sirri, E.R. and Tufano, P. (1998) ‘Costly Search and Mutual Fund Flows’, *Journal of Finance*, Vol. 53, pp. 1589–1622.
  - 11 Carpenter, J.N. (2000) ‘Does Option Compensation Increase Managerial Risk Appetite?’ *Journal of Finance*, Vol. 50, pp. 2311–2331.
  - 12 Chevalier, J. and Ellison, G. (1997) ‘Risk Taking by Mutual Funds as a Response to Incentives’, *Journal of Political Economy*, Vol. 105, pp. 1167–1200.
  - 13 Note that although the initial intention was laudable, the official argument is somehow flawed, as it implicitly assumes no reaction from investors. In reality, investors unsatisfied with the risk change of their portfolio — provided they are aware of it — may react accordingly.
  - 14 Fulcrum fees can only be charged with respect to advisory contracts with (i) registered investment companies or (ii) most other persons if the advisory contract relates to the investment of assets in excess of \$1,000,000.
  - 15 As an illustration, according to Institutional Investor’s Alpha magazine, the best paid hedge fund managers in 2005 were James Simons of Renaissance Technologies Corp. (\$1.5 billion), T. Boone Pickens of BP Capital Management (\$1.4 billion), George Soros of Soros Fund Management, (\$840 million), Steven Cohen of SAC Capital Advisors (\$550 million); and Paul Tudor Jones II of Tudor Investment Corp. (\$500 million). A hedge fund manager had to earn at least \$130 million in 2005 to qualify for a place among the top 25 money earners, and the average salary for the top 25 was \$363 million.
  - 16 Goetzmann, W.N., Ingersoll, J. and Ross, S.A. (2003) ‘High-Water Marks and Hedge Fund Management Contracts’, *Journal of Finance*, Vol. 58, pp. 1685–1718.
  - 17 Alternatively, one could also pre-specify a given level of volatility for the market neutral hedge fund and solve for the resulting weights.

## Appendix

### SEPARATING ALPHA FROM BETA

Let  $P$  denote the portfolio of an actively managed mutual fund, and  $M$  denote the market index used as a benchmark for this fund. Running a simple regression of portfolio  $P$  excess returns on the market index  $M$  excess returns, we obtain:

$$R_P = R_F + \beta_P(R_M - R_F) + \varepsilon_P \quad (\text{A.1})$$

where  $R_F$  is the risk-free rate. Therefore, the variance of portfolio  $P$  returns can be split in two components:

$$\sigma_P^2 = \beta_P^2 \sigma_M^2 + \sigma_{\varepsilon_P}^2 \quad (\text{A.2})$$

The first component is the systematic variance, that is the variance linked to the exposure to the market index  $M$ . In a sense, it is the risk associated to the asset class in which portfolio  $P$  is invested. The second component is the variance specific to portfolio  $P$ . It is also called unsystematic or idiosyncratic variance, and is associated with the specific bets that the mutual fund manager has taken.

This decomposition suggests that the mutual fund portfolio  $P$  may be replicated by creating a synthetic portfolio  $P^*$  allocated to two simple orthogonal components, namely:

— a *leveraged index fund* ( $I$ ), which represents the purely passive component of the synthetic portfolio. It can be seen as a mix between a

pure index fund and the risk-free asset, with proportions  $\beta_I$  and  $(1-\beta_I)$  respectively.

— an active market neutral hedge fund (A) represents the pure active component of the portfolio. Its properties are easily derived from the returns of portfolios  $P$  and  $I$ .

Let us illustrate this replication process. By construction, we have:

$$R_P = R_{P^*} = (w_I)R_I + (1 - w_I)R_A \quad (\text{A.3})$$

where  $w_I$  represents the proportion of portfolio  $P^*$  allocated to the leveraged index fund. The variance of portfolio  $P^*$  is given by

$$\sigma_P^2 = \sigma_{P^*}^2 = w_I^2 \sigma_I^2 + (1 - w_I)^2 \sigma_A^2 \quad (\text{A.4})$$

The ratio of explained variance over unexplained variance of portfolio  $P^*$  should be the same as for the initial portfolio  $P$ . Therefore

$$\frac{[w_I \sigma_I]^2}{[(1 - w_I) \sigma_A]^2} = \frac{R^2}{1 - R^2} \quad (\text{A.5})$$

where  $R^2$  is the coefficient of determination of the regression corresponding to equation (A.1), that is, the proportion of variance in the mutual fund returns that can be explained by the market returns, in percentage terms

How can we determine  $w_I$ ? At this stage, we still have one extra degree of freedom and can impose some restrictions on the volatility of the market neutral hedge fund. For instance, the risk budget granted to the market neutral hedge fund

could be set to the same level as the volatility of the levered index fund.<sup>17</sup> In this case, it is relatively easy to obtain the allocation of portfolio  $P^*$ , and we have:

$$\begin{cases} w_I = \frac{\sqrt{R^2}}{\sqrt{1-R^2} + \sqrt{R^2}} \\ w_A = \frac{\sqrt{1-R^2}}{\sqrt{1-R^2} + \sqrt{R^2}} \end{cases} \quad (\text{A.6})$$

Let us now assume that portfolio  $P^*$  is run at the same level of fees as portfolio  $P$ . The cost of managing portfolio  $P$  ( $C_P$ ) is the weighted average of the costs of running the two underlying portfolios ( $C_I$  for the leveraged index fund, and  $C_A$  for the market neutral fund):

$$C_P = w_I C_I + (1 - w_I) C_A \quad (\text{A.7})$$

Given  $C_P$  and  $C_I$ , we can therefore infer the ‘implied’ cost of the active market neutral portfolio:

$$C_A = \frac{C_P - w_I C_I}{1 - w_I} \quad (\text{A.8})$$

Replacing  $w_I$  by its definition from equation (A.6) and rearranging terms yields:

$$C_A = C_P + \sqrt{\frac{R^2}{1 - R^2}} (C_P - C_I) \quad (\text{A.9})$$

Equation (A.9) expresses the true cost of active management as a function of the cost of passive management and the tracking properties of the examined portfolio.