



Avoiding Misinterpretation in Calculating Performance-Based Fees

Performance-based fee compensation relies on performance fee models that require that specific parameters be clearly stipulated in the fund prospectus and investment management agreement. The following case study is one example of the misinterpretation that can occur when the fee model's parameters are not specifically defined.

The following is one of four case studies drawn from actual practice situations to illustrate common problems that can arise in calculating performance fees and implementing performance fee models.

Case 1 is based on a fund prospectus that stipulates a performance fee rate of 20 percent of outperformance above a hurdle rate of 15 percent a year to be paid to the manager annually and use of the high-water mark principle—both of which are relevant parameters of a performance fee model. This particular fund was a very actively managed fund that invested in volatile stocks, and it was set up as a fund for only a few qualified investors. The first year of the life of this fund was 2007, and it generated very good performance in that first year.

The fund manager calculated the performance fee per fund unit/share on a daily basis using the net asset value (NAV) per share of the fund. In terms of accrual, this calculation is fine, but because the crystallization period was annual, at the end of the year a question arose about the absolute value of the total performance fee that the fund manager was supposed to receive.

On 1 January 2007, which was the inception of the fund, the NAV per unit was \$1,300 and the hurdle NAV was the same.¹ The fund had 32,000 units in circulation, and the total fund value was \$41.6 million. On 31 Decem-

ber 2007, the NAV per unit had risen to \$2,470. The fund's performance for the year equaled 90 percent, or $\$2,470/\$1,300 - 1$. The hurdle NAV on 31 December was \$1,495, or the initial hurdle NAV of \$1,300 plus 15 percent, as stipulated in the fund prospectus. The number of fund shares had risen to 119,000, and the total fund value was \$293.9 million.

The performance fee per share calculated by the manager was \$195, or \$2,470 (the NAV of the fund at year-end) minus the hurdle NAV of \$1,495 multiplied by the fee rate of 20 percent. Alternatively, the performance fee per share of \$195 could also be calculated by multiplying the initial NAV per share of \$1,300 by the 15 percent contribution of the performance fee to the total performance (the total fund performance of 90 percent minus the 15 percent hurdle rate multiplied by the 20 percent performance fee equals 15 percent, which is the share of total performance falling to the performance fee).

Because it was not specified in the fund prospectus what quantity of shares should be used for the calculation of the total performance fee, the fund manager calculated the total performance fee as \$23.2 million using the number of shares outstanding on 31 December, or \$195 per unit multiplied by the 119,000 units in circulation at year-end. When the investors received a reporting of the fund, one investor questioned the calculation. The investor calculated the approximate added value for the entire fund as follows: \$293.9 million (year-end total fund value) minus \$41.6 million (initial fund value) minus the net external cash flow of \$189.7 million (calculated as the

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increase in the number of shares during the year [119,000 minus 32,000] multiplied by the average daily NAV of \$2,180). In this way, the investor arrived at a net gain of \$62.6 million generated by the fund. Then, the investor multiplied this analytically calculated \$62.6 million total fund gain by the percentage contribution of the performance fee (15 percent as calculated earlier) to the fund gain. The result was \$9.4 million, a much lower figure than the \$23.2 million performance fee initially charged by the fund manager.

After the investor challenged the performance fee calculation, the fund manager offered an alternative calculation using the daily average number of shares in circulation during the year, which was 72,800. The 72,800 shares multiplied by the \$195 performance fee per share produced a \$14.2 million performance fee, which was lower than the initial calculation but still higher than the amount expected by the investor. The discussion did not stop there, and in the end, the final performance fee was calculated as follows.

The first step was to determine the initial target fund value. This amount was the fund value at the beginning of the year, which was \$41.6 million, multiplied by 1.15. In other words, the initial fund value must generate the 15 percent hurdle rate return.

The second step was to determine the target value contribution of every external cash flow. Because every external cash flow on a particular day must generate the pro rata performance of the target rate of 15 percent a year, the calculation multiplied the daily difference between the number of shares—an increase represents a cash inflow (i.e., a subscription) and a decrease represents a cash outflow (i.e., a redemption)—by the NAV per share of the previous day, which is the NAV used for subscriptions and redemptions. Then, the calculated value of each cash flow was multiplied by the pro rata target return.

All the calculated cash flow target value contributions and the initial target value were summed together to produce the target total fund value that the fund manager was supposed to generate free of a performance fee. That value was compared with the effective total fund value at year-end to determine the performance fee, and the difference was multiplied by the performance fee of 20 percent, which amounted to \$8.5 million (the details of the intermediary calculation steps are not provided here). The formula for the final computation is

$$\left[V_E - (V_B \times (1 + R_{Hurdle}) + \sum_{i=1}^n CF \times_i (1 + \frac{R_{Hurdle}}{360 - Di})) \right] \times R_{Fee}.$$

The difference between the performance fee of \$23 million that was originally charged by the fund manager and the performance fee of \$8.5 million that was finally agreed on is a significant amount.

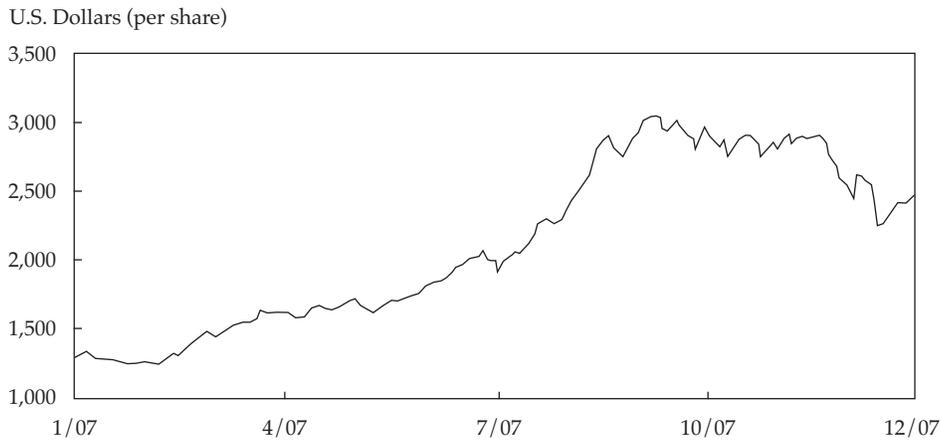
The reason for the discrepancy is that the fund prospectus did not specify, first, what number of outstanding fund shares should be used for the calculation of the total performance fee and, second, whether the performance fee model was to use a time-weighted-return (TWR) or a money-weighted-return (MWR) approach. In September through December 2007, the high number of new shares was accompanied by relatively poor performance of the fund, as **Figure 1** shows. Thus, in the MWR approach adopted by the investor, the last months of the negative performance were weighted more heavily because they related to a larger absolute fund value; that is, the MWR method resulted in a smaller total absolute performance fee. But in the TWR approach adopted by the investment manager, the positive and negative performance periods have an absolutely equal weight, resulting in a higher performance fee per share.

Panel B in **Figure 1** illustrates how the number of shares rose throughout 2007, particularly midyear, in tandem with the fund's performance. Obviously, investors attempted to invest more as the fund reported strong performance. Panel A shows how the highest volume of fund shares was accompanied by relatively poor performance, causing the NAV to flatten out and then to drop during the period from September through December.

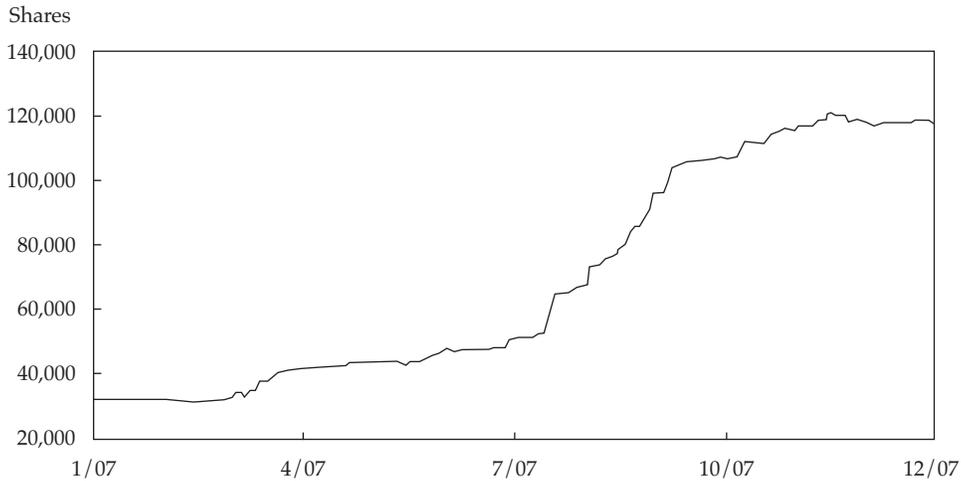
The entire process of negotiating the correct interpretation of the performance fee model was very time consuming and costly. Another implication was that because the whole analysis occurred after the fund's year-end, the daily NAVs for a portion of the current year had to be restated because of the change in the beginning-of-the-year fund value as a result of the performance fee charge correction. Therefore, all of the investor subscriptions and redemptions had to be revised based on the restated daily NAVs, and investors had to be compensated if they had inappropriately incurred a loss. Every aspect of resolving the discrepancy in the performance fee and in the interpretation of the performance fee model had a material impact on the fund, and generally all the trouble

Figure 1. Evolution of NAV per Share and Number of Shares in Case Study 1, January 2007–December 2007

A. Net Asset Value



B. Number of Shares



occurred because the fund prospectus did not specify the exact performance fee calculation method in every detail.

The main issue related to the capital basis for the performance fee calculation is that when using the NAV-per-share, or TWR, approach to calculate the performance fee, the question is, what number of shares should be used to calculate the total performance fee: the number at the end of the period, the number at the beginning of the period, or the average over the period? Some funds do use the end-of-period approach, and this choice may lead to significant distortions in the fee calculation. Experience shows that a majority of funds use the simple average number of shares in circulation during the whole

period, which is a smoothed method that provides more reasonable results. Empirical analysis shows that in most cases, using a rolling average number of shares only for the period in which the performance fee accrues offers the best results. To avoid misinterpretation, the fund prospectus must define the number of units that will be used to determine the total performance fee. ♦

NOTES

1. The figures in this case study have been changed, but the magnitude remains comparable.

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