



INTRODUCTION

Although management fees and performance fees receive the most attention when investors examine hedge fund fees, they are not the only associated costs. There are also indirect costs resulting from the purchase and sale of securities, such as trading commissions. Another lesser-studied element of hedge fund costs, and the focus of this review, are a hedge fund's operating expenses. Therefore, the all-in total costs associated with hedge fund investing can be broken down into headline fees (management fee and performance fees), and indirect costs such as trading commissions and operating expenses. Over the life of an investment, the total economic impact of headline fees will be the largest cost to an investor, but investors should also consider the economic impact of operating expenses.

The purpose of this review is to analyze hedge fund operating expenses to provide investors a better understanding of the all-in costs associated with hedge fund investing. The research outlines the basics of hedge fund operating expenses and presents the potential long-term impact to investors' performance. Additionally, the review can 1) serve as a benchmarking tool for investors comparing fees across their manager roster, 2) assist hedge fund managers interested in benchmarking operating costs, and 3) support hedge fund stakeholders with manager selection.

HEDGE FUND OPERATING EXPENSES

Operating expenses are costs associated with executing the day-to-day management and operation of an investment strategy. These typically include legal fees, audit & tax expenses, and third-party administration costs. They may also include more vague costs such as professional fees and research expenses. Operating expenses are costs charged to the fund and therefore are passed through as a cost to the investor. Investors can think of these expenses as costs they pay, but do not necessarily see firsthand. Hence the distinction between headline fees, which are advertised costs, and the less explicit operating expenses.

Despite the heightened level of scrutiny placed on hedge fund fees, operating expenses are less understood for a variety of reasons. Operating expenses are more indirect than the advertised cost of hedge fund investing. The sticker price of a management fee and a performance fee is straightforward and relatively simple to model. The headline fees are also typically advertised in a fund's marketing materials. It is less common for a hedge fund to advertise historical or anticipated operating expenses. To verify a hedge fund's operating expenses, an investor must review the fund's audited financial statements, which vary by auditor and can be opaque. Also, the individual line items that constitute operating expenses tend to be loosely defined. Ambiguous line items such as professional fees and research expenses can act as a catch all for various one-off expenses such as consulting fees paid to expert networks, travel costs, or marketing expenses. However, all these costs have an economic impact on the total return of an investment.

Total Costs

Figure 1 shows the hypothetical effects of all fees associated with hedge fund investing, based on +/-10% gross performance of the manager. The management and performance fees of 1.6% and 18% are the median fees reported from a handful of a major bank's prime brokerage teams. The figure of 35 basis points is the average hedge fund operating expense ratio across 2015 and 2016, using Meketa Investment Group data. In the investment gain scenario, investors keep 66% of their invested capital, and the remaining 34% is paid to the investment manager in the form of fees. In a negative scenario, the investors bear greater than 100% of the negative performance, when you consider that the investment manager collects the stated management fee while passing through the operating expenses. The scope of this research is to review what exactly constitutes the 35 basis points of operating expenses represented in Figure 1, and show the effects of these costs over time.

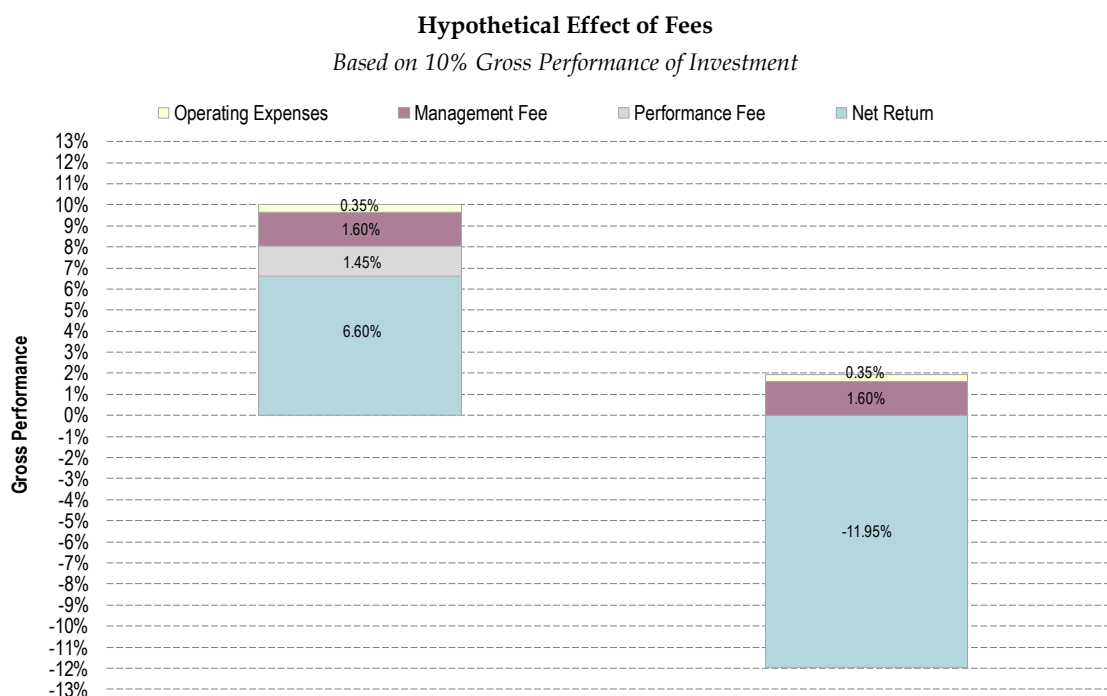


Figure 1. Hypothetical Effect of Fees on Investor Performance.

Neither the SEC nor the Financial Industry Regulatory Authority ("FINRA") set standards of operating expenses for investment managers. The regulators do not offer guidance on the reasonability of operating expenses. In fact, in the Investment Company Act of 1940 – the legislation that governs the fiduciary responsibility of investment managers – "fee" or "fees" is mentioned 28 times in the 58,055 word document. When fees are mentioned, it is within the context of the costs associated with the purchase or sale of shares, never about operating expenses. Based on our survey of investment managers' Chief Financial Officers ("CFOs") and internal/external legal counsel, the standard protocol for recognizing operating expenses is to include any function utilized in the investment decision-making process. Technically, any expense charged to the investor is governed by the investment manager's limited partnership agreement and offering documents. The costs are outlined within the offering

documents, but language is often written vaguely, giving investment managers wide latitude to vary expenses. However, an ethical question still exists because the offering documents are created by the investment manager and their counsel. As a result, due to the absence of strict guidance, operating expenses vary widely across managers. The hedge fund manager, and their CFO, has discretion on how to interpret the offering documents and what to include within the overall operating expenses.

Types of Expenses

Figure 2 shows the categories of costs and their contributions to the average hedge fund's operating expenses during 2015 and 2016.

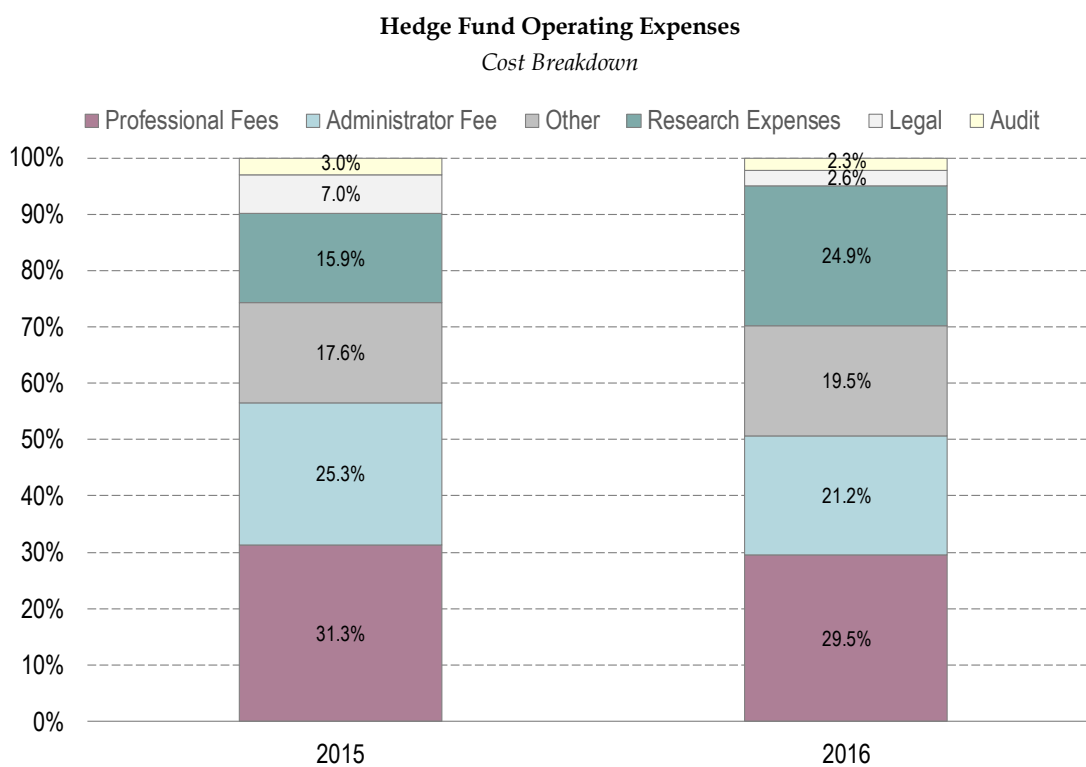


Figure 2. Hedge Fund Operating Cost Breakdown.

The chart illustrates that the majority of operating expenses fall into the less descriptive categories of "professional," "research," and "other." On average, 65% of operating expenses in 2015 and 75% of operating expenses in 2016 were associated with those three categories. The remaining operating expenses are in three conventional categories: administration, legal & compliance, and audit & tax.

Administration

Administration costs are related to third-party accounting, which includes the maintenance of a manager's books & records, profit & loss calculations, and the official calculations of the fund and investor's net asset value. It is best practice for a manager to outsource these services to assure that calculating performance, profit & loss, and

valuation is completely independent. This is because there is an embedded conflict of interest for an investment manager whose compensation is based on the performance of said investments to be responsible for administration. In addition, the majority of administrators provide other useful services, such as regulatory reporting and shareholder services.

Legal & Compliance

Legal costs typically include creating the fund formation documents and offering agreements, and supporting the investment manager in negotiating servicing agreements with outside vendors, such as setting up a credit facility with a bank. On the compliance side, costs can include registration fees paid to a governing authority such as the Securities and Exchange Commission (“SEC”). Other common legal & compliance expenses are costs associated with offshore fund registration and directors as well as compliance training and mock SEC audit preparation. Offshore directors are independent directors hired by asset managers who have funds registered offshore for tax purposes. Offshore jurisdictions such as the Cayman Islands’ tax code requires funds registered there to appoint independent directors. Less common legal expenses include those associated with specific investment deals. For example, a credit-focused asset manager may ask legal to review a bond transcript and indenture for any non-standard terms of agreement.

Audit & Tax

Investment managers will conduct an annual audit of the firm and funds and provide the appropriate tax reporting to their investors. The external audit is considered a critical part of fund governance and is typically conducted by one of the major accounting firms. Tax reporting is also a necessary component of operating an investment fund. Firms are responsible for delivering the appropriate documentation such as a 1099 or K-1 to their investors.

Professional, Research, and Other

“Professional, research, and other” is the catch-all category for investment managers and can be the largest component of operating expenses, and therefore the most important category to evaluate. Typical costs an investor will see within these categories are various forms of business insurance, vendor expenses such as Bloomberg, FactSet, etc., organizational costs (relevant for newer firms), and systems such as order management systems as well as software, such as portfolio management and accounting software. Other less common, and more controversial costs, investors may see are travel costs associated with research, marketing costs associated with the selling the fund(s) such as the creation of marketing materials or the cost of reporting to various databases, and in extreme cases even salaries or bonuses.

Factors Affecting Expenses

Ultimately, the largest factor affecting what gets passed through to investors is the manager's discretion. The data shows that there is little consistency, outside of audit, legal, and administration, in what expenses get passed through to the funds. Beyond the firm's philosophy on passing through costs, there are two main factors that have a large impact on operating expenses: investment strategy and assets under management.

Figure 3 shows the average operating expenses by hedge fund strategy. Operating expenses may fluctuate across years based on a number of factors. For example, it could be that an organizational cost becomes fully amortized and has rolled off as an expense, or a firm has increased the number of Bloomberg terminals, which has increased the expenses. Regardless of the justification, Meketa Investment Group believes that calculating operating expenses by strategy is informative to hedge fund investors because it provides a baseline for the expenses associated with operating in each sector.

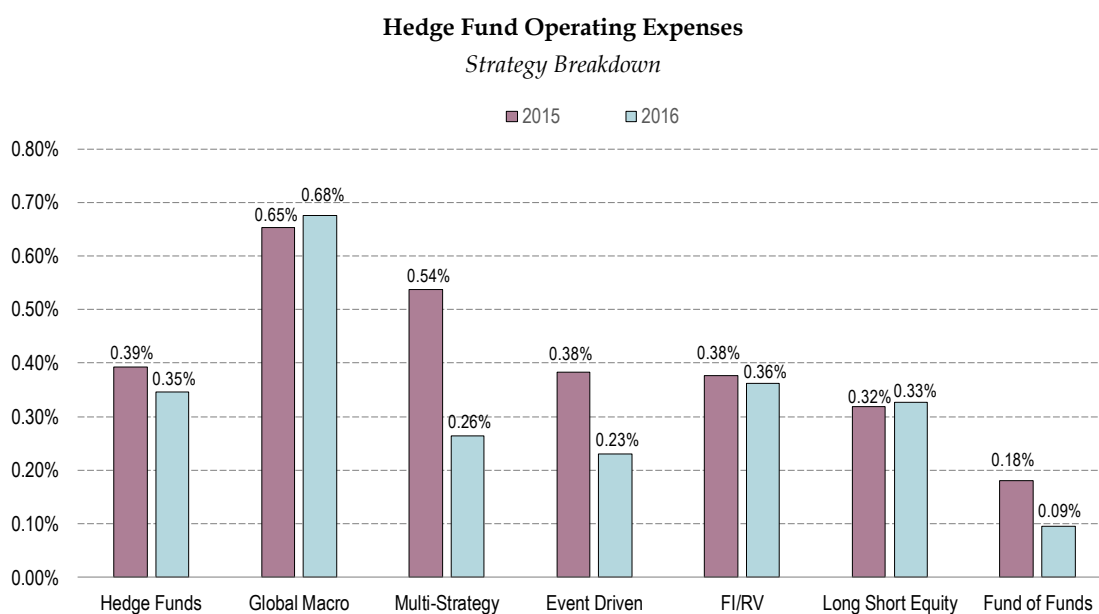


Figure 3. Operating Expenses by Hedge Fund Strategy

Average operating expenses in 2015 and 2016 were 39 basis points and 35 basis points, respectively. These figures were driven up by the Global Macro category, which had average operating expenses of 65 and 68 basis points across the same timeframe. Global Macro strategies typically subscribe to a significant quantity of global economic data and research. Additionally, Systematic Global Macro investors may pass through the costs of expensive hardware and software. Operating a systematic strategy requires significant computing power and systems. Another factor that could be driving up Global Macro expenses is the additional exposure to emerging markets and commodity markets. Both data and research within these markets can be costly.

Fund of funds were the least expensive hedge fund strategy for 2015 and 2016. These figures are somewhat of a mirage, considering they only account for the operating expenses that are charged by the fund of funds. They do not include the expenses that are charged by the underlying funds these firms are invested with. This is simply an additional layer of fees charged on top of the expenses highlighted in the categories in Figure 3, depending on the composition of the fund of funds.

The second most important factor driving operating expenses is the level of assets under management. In Figure 4, we show that as the assets under management increase, operating expenses as a percent of fund assets tend to decrease, as they are shared across a broader asset base.

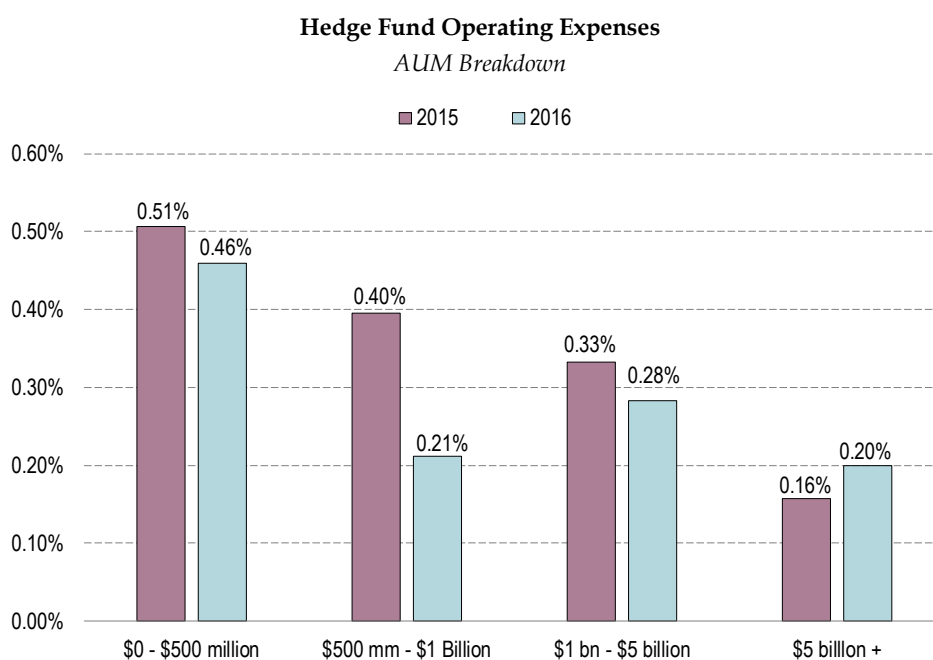


Figure 4. Operating Expenses by Assets under Management

The size of the firm is important to total costs, given there are economies of scale to running any business, including investment firms. Operating expenses are a combination of fixed and variable costs. As assets under management grow, the relative operating costs do not grow proportionally due to the fixed cost component. For example, audit costs are typically fixed costs quoted annually based on the complexity of the firm and strategy (another influence of strategy costs).

It appears there are significant operating expense savings, when investing with larger strategies. However, there are a few implications to consider relating to the declining operating costs of larger firms. The first implication is the tradeoff between the size of the firm and the potential opportunity set of the strategy. Investors should consider whether the market in which the firm operates is capacity constrained. Higher assets under management can lead to strategy drift or a degradation in the manager's ability to add value. For example, consider a large capitalization, long-short equity manager and a small

capitalization sector-focused manager. Investors with the large capitalization manager would, in theory, benefit more from economies of scale because that manager's expertise and opportunity set are aligned. Whereas the net benefit of asset growth is potentially muted for the investor in the small capitalization manager who has the potential to outgrow that market. Additional AUM may force them to invest in more liquid, larger capitalization stocks and/or invest in more securities.

Another implication as it relates to a firm's size is their willingness to negotiate headline fees. Smaller firms, more so than larger well-established firms, may be more likely to compromise on headline fees to grow assets.

Economic Impact

Given the latitude managers have with respect to passing through costs to investors and the factors affecting those costs, we examined the total economic impact of a hypothetical investment under various operating expense scenarios. Figure 5 shows the growth of a \$1000 investment over 10 years based on the 95th through 5th percentiles of operating expenses in our data set.

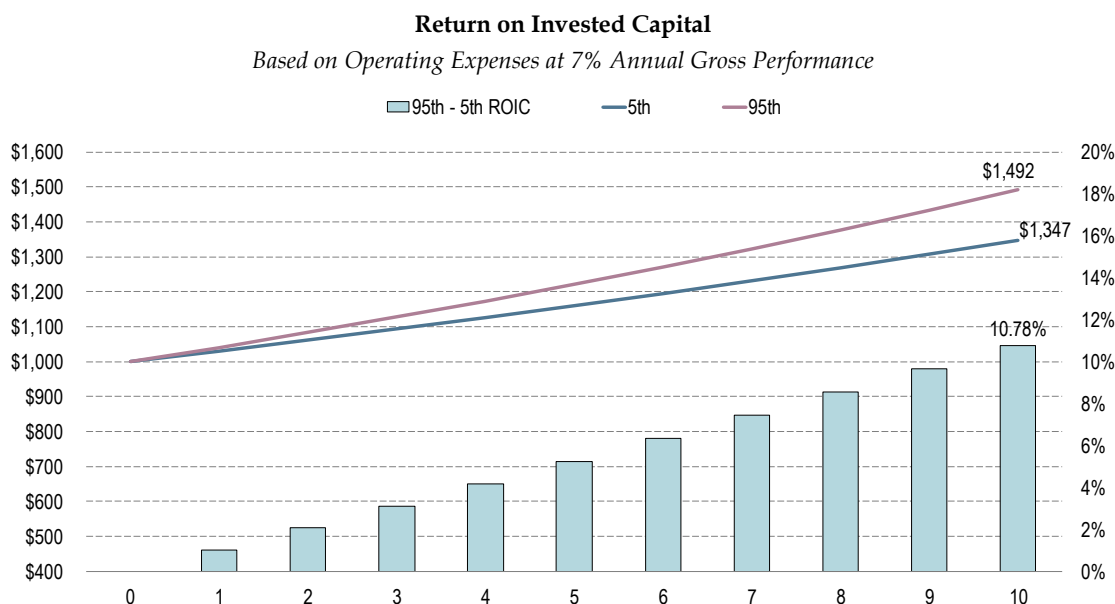


Figure 5. Return on Invested Capital based on Various Levels of Operating Expenses

We stratified our data set and calculated various percentiles to determine what the operating expenses for the 95th percentile manager (low operating expenses) versus the 5th percentile manager (high operating expenses). We modeled each of these managers using standard fee structure (1.6% management fee and 18% performance fee) to normalize the impact of headline fees on the total return of the investment and isolate the effect of operating expenses. Using this data we then assumed annual performance of 7%, gross of fees. We assumed no additional subscriptions or redemptions during this timeframe. We did not consider negative performance years because the purpose of the research is to assess the total return effects

versus the effects of path dependency. We acknowledge that the path dependency of an investor's annual return will change the overall outcome, but in isolation we expect operating expenses to have a material impact.

As Figure 5 illustrates, the expenses increase over time due to the effects of compounding. Every incremental cost takes away from every incremental dollar potentially invested. As a result, the effects of higher operating costs not only reduce an investor's incremental annual return, but also reduces the amount of capital invested, thereby decreasing future performance. We found as much as a 418 basis point dispersion between the 95th percentile manager (low operating expenses) and the 5th percentile manager (high operating expenses) on a 5-year basis and a 1078 basis point spread between the 95th and 5th on a 10-year basis. In dollar terms, for a \$10 million dollar initial investment that equates to \$471,016 of additional return over 5 years, and \$1.45 million over 10 years.

CONCLUSION

Operating expenses vary across hedge fund firms based on a number of factors including strategy type, firm and strategy size, and the firm's philosophy on passing through costs. The average operating expenses for all hedge funds in the study were 39 basis points and 35 basis points in 2015 and 2016, respectively. The most expensive hedge fund strategy was Global Macro, with operating expenses of 68 basis points and 65 basis points over the same timeframe. The data also show that there are substantial economies of scale with respect to operating expenses. Firms with less than \$500 million had average operating expenses of 51 basis points and 46 basis points in 2015 and 2016, whereas firms with greater than \$5 billion had average operating expenses of 16 basis points and 20 basis points over the same timeframe. Ultimately, the difference in the economic impact associated with the 95th percentile of operating expenses and the 5th percentile of operating expenses can cost investors 1048 basis points of cumulative total return over ten years.

As firms pass through costs to investors, the economic impact over time can sharply reduce the total return the investors realize. As a result, it is important for investors to be aware of what operating expenses are being passed through and to assess the total all-in costs associated with an investment. Investors should also consider that advertised costs do not tell the whole story, as they do not include the firm's operating expenses. It is possible that a manager charging a 1.6% management fee is more costly than one charging 2%, after accounting for the operating expenses. Given the flexibility managers have with expensing costs to investors, it is up to the investor to monitor and determine which operating expenses are aligned with the headline costs and the firm's strategy. Investors should consider the total costs associated with accessing an investment strategy, which includes the advertised headline fees as well as the operating costs.

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