ECONOMIC ANALYSIS OF THE SPLIT OF PROFITS BETWEEN HEDGE FUND INVESTORS AND HEDGE FUND MANAGEMENT BY MERRILL LYNCH & CO. INC.

Introduction

Merrill Lynch & Co. Inc. engaged Deloitte & Touche LLP ("D&T") to perform an analysis of hedge fund profitability for transfer pricing purposes. Hedge funds are of interest because the contracts between fund managers and investors represent arm's length transactions between providers of capital and those tasked with investing that capital. In some cases, the facts and circumstances of a global trading operation may be such that the closest market comparables are the transactions between hedge fund investors and managers.

The analysis here provides a brief description of the defining characteristics of the hedge funds, discusses factors that increase the comparability between hedge funds and global trading operations and describes the split of profits in the context of hedge fund operations.

Description of Hedge Funds

The term hedge funds describes a broad class of private investment partnerships which invest in both long and short positions, use leverage and derivatives, and frequently invest globally.[1] Most hedge funds are exempt from the Securities and Exchange Commission ("SEC") registration because they are private placements with a limited number of partners. To maintain those exemptions, hedge funds are restricted from advertising or holding themselves out to the public as investment advisors.

Frequently, hedge fund managers are experienced financial professionals that have worked in the global operations of investment banks and who have decided to go into business for themselves. The fund managers invest the funds. Investors in hedge funds are generally charged a management fee (approximately 1% of assets under management) and an incentive fee (typically 20% of profits) based on

[1] Dictionary of Finance and Investment Terms, 5th Ed. New York: Barron's Educational Series, Inc., 1998.

the fund's overall performance.[2] Anecdotal evidence suggests that for most funds the management fee is roughly equal to operating costs[3].

Comparability of the Hedge Funds and the Derivatives Trading Operations

The comparability of hedge fund data to the related party transactions that underlie a global trading operation must be determined on the basis of the specific facts and circumstances of the transactions involved. However, there are some factors that may contribute to this comparability. First and foremost, the contracts between hedge fund managers and investors separate the return to capital's contribution from the return to the trading function's contribution. In many cases, companies engaged in global trading have chosen to centralize risk bearing functions in one entity for better risk management, more efficient use of capital and other business reasons. This separation between the trading and risk bearing functions parallels the contracts between hedge fund managers and investors. Second, hedge funds generally engage in trading and the pursuit of arbitrage opportunities rather than in long term investing, which is consistent with the objectives and operations of global trading operations. Third, hedge funds are frequently run by investment professionals that have worked in the global trading operations of large investment banks. This implies a competition for the same human capital resources and hence implies a degree of comparability in the compensation paid to traders, which is one of the most significant operating costs for both hedge funds and global trading operations. A final factor that increases the comparability of hedge fund operations with global trading operations is the proliferation of different types of funds. This enables the selection of a set of hedge funds with a risk profile that is qualitatively similar to a specific global trading operation.

The following list of hedge fund types is illustrative rather than exhaustive:

- **Convertible Arbitrage** – fund managers purchase a portfolio of convertible securities, generally convertible bonds, and hedge a portion of the equity risk by selling short the underlying common stock.

- **Distressed Securities** – fund managers purchase or sell short, the securities of companies where the security's price has been, or is expected to be, affected by a distressed situation. This may involve reorganizations, bankruptcies, distressed sales and other corporate restructurings.

- **Emerging Markets** – fund managers purchase the securities of companies or the sovereign debt of developing or "emerging" countries. Investments are primarily long. "Emerging Markets" include countries in Latin America, Eastern Europe, the former Soviet Union, Africa and parts of Asia.

- **Equity Hedge** – fund managers maintain a core holding of long equities hedged at all times with short sales of stocks and/or stock index options. Some managers maintain a substantial portion of assets within a hedged structure and commonly employ leverage. Where short sales are used, hedged assets may be comprised of an equal dollar value of long and short stock positions.

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[2] Collins, Daniel, *Hedge Funds Bubbling Over?* Chicago: Futures Magazine Group August 2002:60.

[3] Among the sources noting that the fund management fee is roughly equal to operating costs is the July 27, 2001 letter (page 8) from the Securities Industry Association to Barbara Angus and Patricia Brown, commenting on the Proposed Global Dealing Regulations and an article (page 391) entitled **The Institutional Investor's View: Effect on Venture Capital and Private Equity Funds** by Katherine Todd. The Todd article appears in **The New Era of Investment Banking** edited by Raymond Rupert.

- **Equity Market Neutral** – fund managers seek to profit by exploiting pricing inefficiencies between related equity securities, neutralizing exposure to market risk by combining long and short positions.

- **Equity Non-Hedge** – these funds are generally long equities although they have the ability to hedge with short sales of stocks and/or stock index options. These funds are commonly known as "stock-pickers". Some funds employ leverage to enhance returns.

- **Event Driven –**this involves investing in opportunities created by significant transactional events, such as spin-offs, mergers and acquisitions, bankruptcy reorganizations, recapitalizations and share buybacks.

- **Market Timing –** this involves allocating assets among investments by switching into investments that appear to be beginning an upward trend, and switching out of investments that appear to be starting a downward trend.

- **Short Selling –** this involves the sale of a security not owned by the seller; a technique used to take advantage of an anticipated price decline. To effect a short sale, the seller borrows securities from a third party in order to make delivery to the purchaser.

- **Fund of Funds –** these funds invest with multiple managers through funds or managed accounts. The strategy designs a diversified portfolio of managers with the objective of significantly lowering the risk (volatility) of investing with an individual manager.

Analysis of Hedge Fund Profitability

The data on hedge funds analyzed was drawn from a proprietary database, the use of which D&T has licensed from a third party. The set of data that underlies this analysis is drawn from Equity Hedge, Equity Non-Hedge and Equity Market Neutral funds. However, depending upon the specific products traded by the relevant global trading operation, others of the fund types listed above could be used. In general, hedge funds can be found that engage in global trading, use derivatives, engage in short selling and purchase complex financial products. This implies a high degree of product comparability between hedge funds and the global trading operations of many investment banks.

There were 252 Equity Hedge, Equity Non-Hedge and Equity Market Neutral funds with complete data on management fees, incentive fees, assets under management and returns earned by the funds. From this data, it was possible to infer the split of profit between capital providers and hedge fund management. The table on the following page presents summary statistics on the incentive fees earned by these 252 funds during the period from 1998 to 2002.

Table 1

Data on Hedge Fund Fees

	Incentive Fees
Lower Quartile	20.00%
Median	20.00%
Upper Quartile	20.00%
Number of Funds	252

The results of Table 1 confirm that the typical hedge fund charges an incentive fee of twenty percent of profits[4]. It should be noted, that when a fund had losses, the losses were borne by the capital provider. Conversely, the incentive fee was not paid to the hedge fund management until past losses had been recovered.

The hedge funds in Table 1 varied considerably in terms of the risk assumed. The sample of hedge funds in Table 1 was stratified by Beta, which is a measure of risk. The Beta used here measures the correlation between the expected return of the hedge fund and the expected return of the S&P 500 index, relative to the variance of the return of the S&P 500 index. There are other measures of risk that could have been used (e.g., Sharpe ratio, Beta relative to another index etc.) but the results under these other measures will be directionally the same. The incentive fees for the hedge funds, stratified by Beta are shown in Table 2.

Table 2

Hedge Fund Fees Stratified by Beta

	Incentive Fees
Beta less than 0.17	
Lower Quartile	20.00%
Median	20.00%
Upper Quartile	20.00%
Beta from 0.17 to 0.57	
Lower Quartile	20.00%
Median	20.00%
Upper Quartile	20.00%
Beta above 0.57	
Lower Quartile	19.25%
Median	20.00%
Upper Quartile	20.00%

As with hedge funds, there may be considerable variation across global dealing operations in terms of the amount of risk assumed in the course of business. Table 2 demonstrates that the contractual terms governing hedge funds basically do not vary based upon the amount of risk that the fund assumes. As these contractual terms serve as the basis from which the split of profits between investors and hedge fund managers is inferred, this implies that adjustments for risk are unnecessary when using hedge fund data[5].

[4] As noted above, the management fee for most of the funds was one percent of assets under management.

[5] This does not imply that expected return is uncorrelated with risk. Economic theory indicates that as the amount of risk assumed increases, the expected return will also increase. Thus, while the amount of profit earned by a hedge fund will vary depending upon the amount of risk assumed, the split of profits between investors and

The hedge funds in the sample above also vary considerably in terms of the scale of operations. There are some aspects of both hedge fund operations and global trading operations that may lend themselves to economies of scale. In particular, the analysis required to identify a profitable trade is similar for a trade of 100 shares and for a trade of 10,000 shares. Accordingly, the sample of hedge fund fees shown in Table 1 was stratified by fund capitalization. The results are shown in Table 3.

Table 3

Hedge Fund Fees Stratified by Market Capitalization

	Incentive Fees
Capitalization less than $50 million	
Lower Quartile	20.00%
Median	20.00%
Upper Quartile	20.00%
Number of Funds	133
Capitalization between $50 and $100 million	
Lower Quartile	15.00%
Median	20.00%
Upper Quartile	20.00%
Number of Funds	35
Capitalization above $100 million	
Lower Quartile	20.00%
Median	20.00%
Upper Quartile	20.00%
Number of Funds	84

The results of Table 3 demonstrate that the fees charged by the hedge funds basically do not change as the funds increase in size. However, as the scale of global trading operations is likely to be closer in size to those hedge funds that operate with a market capitalization of greater than $100 million, data on those funds is used to infer the split of profits between investors and hedge fund managers.

hedge fund managers is not expected to change because the incentive fees charged by a fund appear to be uncorrelated with the risk it assumes.

Table 4

Split of Profits between Hedge Fund Investors and Managers

For Funds with Capitalization in Excess of $100 million

During the Period from 1998 to 2002

	Capital Share of Profit
Lower Quartile	74.57%
Median	79.75%
Upper Quartile	80.00%

Table 1, Table 2 and Table 3 show that the contract terms under which hedge fund managers operate generally allocate 20 percent of the fund's profit to the manager. As noted above, funds that have losses must recoup the losses before the fund manager receives a percent of the profits. However, investors have no right to recover losses from incentive fees that have already been paid. Losses that are not fully offset by future profits are borne by the fund investors. The average ex poste share of profits that is retained by investors in the Equity Hedge, Equity Non-Hedge and Equity Market Neutral funds with capitalization of at least $100 million is shown in Table 4. The sample focuses upon results for these larger funds because this is the scale expected to be most comparable to the operations of a global trading organization. The estimate of the interquartile range of the share of profits earned by investors is based upon five years of monthly data on fund incentive fees, management fees, returns and assets under management. Using the interquartile range as an indicator of arm's length results, Table 4 can be interpreted to imply that at arm's length the providers of capital can expect to earn approximately 75 percent to 80 percent of the fund's profits, while the balance of profits would be earned by the trading function.