Preventing and detecting hedge fund failure risk through partial transparency

Keith H. Black

Illinois Institute of Technology, 565 W. Adams #643, Chicago, IL 60661, USA.
Tel: +1 312 906 5146; Fax: +1 312 906 6511; E-mail: KBlack@stuart.iit.edu

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Keith Black teaches at the Stuart School of Business at the Illinois Institute of Technology. His courses include Global Market Economics, Equity Valuation, Investments, Portfolio Management and Mutual Funds, Hedge Funds, Enterprise Formation and Finance and Global Investment Strategy. His book 'Managing a Hedge Fund' was named one of the top ten books of 2005 in risk management and financial engineering by the Financial Engineering News. He has earned the designations of Chartered Financial Analyst and Chartered Alternative Investment Analyst, as well as an MBA from Carnegie Mellon University. His professional experience includes commodities derivatives trading at First Chicago Capital Markets, stock options research and CBOE market-making for Hull Trading Company, and building stock selection models for mutual funds and hedge funds for Chicago Investment Analytics. He has published in the *CFA Digest*, *Journal of Trading*, *Journal of Global Financial Markets* and the *Journal of Financial Compliance and Regulation*.

Practical applications

Some hedge fund investors may pay close attention to market risk while not spending enough time considering operational risks. The examples of Bayou, Wood River and Lancer are used to illustrate the operational risks that are all too present in hedge funds. A proposal to gather and aggregate data directly from brokers and custodians could reveal a large portion of the data necessary to make well-informed risk management decisions. Investors do not really need to know the details of every position owned by a hedge fund. They only need to see the partial transparency of aggregated risk statistics. A risk management system that is less intrusive to managers and more useful to investors could be an invaluable tool to fight hedge fund fraud.

Abstract

Hedge fund managers often do not offer transparency to their investors. To do so, they say, would reveal their trading strategies and reduce their investment profits, as other traders use the knowledge of their positions to compete for the same trades. However, most investors do not need complete transparency, which reveals trading positions on a frequent basis. Complete transparency, revealing the specific securities in the portfolio, can be damaging to the hedge fund manager,

and confusing to the investor. However, the investor can benefit from partial transparency. A third-party service that aggregates portfolio information can be invaluable to investors in their search for stronger risk management and fraud prevention techniques. However, most commercially available services focus on market risk and do not provide the data necessary to detect operational risk failures. Through the use of three case studies: Bayou, Lancer and Wood River, we demonstrate a few simple tests to prevent and detect

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both market risk and operational risk by hedge fund managers.

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INTRODUCTION

While the subject of hedge fund frauds and failures may be uncomfortable to discuss, these discussions are important to increase our understanding of how to prevent future occurrences. There are many constituents who may be harmed when a hedge fund fails. Clearly, we are concerned about the investors who have lost money during these failures. However, we must also consider the impact on the prime broker and the external partners of the hedge fund firm, including third-party marketers, funds of funds managers and investors, auditors, and administrators. Finally, there may be innocent employees and partners within the hedge fund firm, who will lose not only financial assets, but also their professional reputation, even though they may have not directly participated in the activities that led to the demise of the firm. The more quickly these risks are uncovered, the easier it may be to recover assets and prevent new investors from contributing to a failing fund.

MARKET RISK AND OPERATIONAL RISK

In this paper, we will refer to the failure of a hedge fund as an event when nearly all of the assets under management are lost in some way. These losses are usually attributed to market risk and/or operational risk. A hedge fund can lose a significant portion of investor assets due to

market risk, where the trading positions of the fund suffer a significant decline in value. This can happen very quickly during a time of great stress and volatility in the market, or over a longer period of time due to a change in market conditions or a failure of the fund's investment strategy.

A hedge fund can also lose assets through an operational failure. Kundro and Feffer^{1,2} estimate that 54 per cent of hedge fund failures can be attributed, at least in part, to operational risks. Of the funds that failed due to operational failures, they estimate that 6 per cent of occurrences were due to inadequate resources, 14 per cent due to unauthorised trading and style drift, 30 per cent from the theft of investor assets and 41 per cent from the misrepresentation of investments and performance. Further, they estimate that 38 per cent of hedge fund failures had only investment risk, meaning that the operational controls were in place and effective. Surprisingly, 54 per cent of hedge fund failures were due to operational risk, while the final 8 per cent of hedge fund debacles could be attributed to business risk or a combination of a number of different risks.

There has been a significant research focus on quantifying market risk, as models such as value-at-risk, scenario analysis and portfolio stress testing enjoy significant popularity. Third-party services, such as RiskMetrics, have been developed to report and model the market risk of investment portfolios. Quantitative risk management of hedge fund investments is an extremely popular and effective way to reduce the probability and the size of investor losses due to adverse market events. Clearly, many investors spend a substantial amount of time modelling and managing market risk. However, only 38 per cent of hedge fund failures are solely

attributed to market risk. Unfortunately, investors may be spending much less time and effort on the detection of the operational risks that are present in 54 per cent of hedge funds that presented their investors with catastrophic losses. If investors are not effectively measuring and monitoring the risks that lead directly to significant losses, there can be an opportunity to upgrade the effectiveness of the entire risk management process.

The combination of theft of investor assets and the erroneous reporting of portfolio composition, returns and risks, is responsible for at least as many hedge fund failures as market risk. However, the search for theft and fraudulent performance reporting has not been nearly as well developed or understood as the measurement and detection of market risk. The goal of a risk detection system is to be able to mitigate the risk in a timely fashion. For market risk, we would like to ask the manager to reduce the position size before the losses occur, or a fund of funds manager may make trades at the portfolio level to reduce market risks. In extreme cases, the investor may choose to sell their interest in the fund in order to reduce their market risk. Ironically, the market risk failures of a fund may happen very quickly due to the speed at which financial markets prices can move during a time of crisis. Even if market risk can be detected, investors may not have time to request a return of their investments before the market has claimed significant losses.

Operational risks may operate more slowly. If investors are constantly searching for these risks, they may have the ability to redeem their fund interests months, or years, before the likely demise of the fund. The investor clearly has been successful if they receive a return of their investment and the fund later fails due to reasons

predicted by their risk monitoring system. Clearly, then, the risk monitoring focus of many hedge fund investors has been on market risk issues, and many have failed to see the entire risks of hedge fund investing, which include operational risk issues.

DUE DILIGENCE AND MANAGER TRANSPARENCY

Most investors understand the importance of performing a due diligence review before hiring a hedge fund manager. Many contributors to Parker³ present exhaustive checklists of the steps of performing due diligence on a hedge fund manager. These due diligence tasks typically focus on people and systems.

Before hiring a hedge fund manager, we need to determine that they are honest and highly qualified. Investors desire to hire fund managers with a significant educational background and professional experience at a reputable bank or trading firm. Allison and Schurr⁴ discuss the due diligence process. Control Risks Group is a firm that studies the personal backgrounds of hedge fund managers. These private investigators search public records and verify the history and career of each significant employee.

There are some surprisingly large instances of dishonesty among hedge funds managers. For example, Control Risks Group estimates that 80 per cent of fund manager resumes include some misstatements or omissions. On average, 14 per cent of these hedge fund investigations reveal some negative information, which can range from an overstatement of assets under management to the manager having been previously involved in litigation regarding financial fraud or unpaid bills. You would also like to make sure that your hedge fund manager

is focused on the business and does not lead a reckless lifestyle. A current divorce proceeding, a significant side business, or a driving under the influence accusation are some red flags that may cause some investors to question the appropriateness of hiring this manager. Much of this due diligence work requires contacting the accountants, prime brokers and administrators of the fund to verify the assets, returns and trading activity in the portfolio.

However, not all investors are as serious about monitoring developments at the hedge fund firm after the investment has been made. Tran⁵ emphasises the importance of the on-going due diligence efforts. A significant red flag is the turnover of senior personnel within a hedge fund company. This may signal a conflict between the partners of the firm, which could be regarding trading philosophies, valuation and performance issues, or the unprofessional or unethical behaviour of someone within the firm. Tran also demonstrates the importance of the hedge fund's auditor. The auditor should be a reputable, verifiable firm, who can confirm the historical returns and current asset levels of the fund. During the year 2000, as many as 40 per cent of hedge funds had no auditor. Funds with smaller assets under management are more likely to have unaudited financial statements. Tran states that the reported returns of audited funds are much more accurate than those of unaudited funds. Also, the probability of a fund liquidation is larger in funds that do not employ an auditing firm.

Transparency is an extremely important part of the due diligence process. A transparent hedge fund is one where an investor's questions are freely answered. Investors may request the disclosure of positions, position exposures or return estimates on a weekly basis. An opaque

fund will divulge little about their operations to investors beyond the reported monthly returns. While investors may want the fund to be transparent, hedge fund managers may have legitimate reasons to avoid sharing information with their investors. Transparency allows investors to be informed with their selection and retention of hedge fund managers, and gives them important information that can be used to minimise the risks of their investment.

Hedge fund managers earn higher incomes when they attract larger assets under management and earn larger returns. The lack of transparency requested by some hedge fund managers is simply an attempt to protect their valuable franchise. If their trading strategy is lucrative, yet easy to replicate, it is clear that they would not like to share their trading algorithms with investors, brokers or accountants. Should one of these counter parties choose to replicate the strategy and make the same trades, the hedge fund manager may be significantly impacted. As other investors seek to make the same trades, the profitability of the hedge fund declines. As others replicate the trading strategy, the hedge fund manager can lose their unique edge, as other fund managers may start to market a similar strategy. The impact on a given hedge fund can be even larger when the identity of the fund's largest positions are revealed to the market, especially when the fund has large positions in small capitalisation stocks or illiquid fixed income securities. When the market knows that a fund has large positions to liquidate, such as at Long Term Capital Management, these positions become much harder to exit and the trading costs will soar. If the fund's short sales are revealed, this can limit the fund manager's ability to communicate with the management of

the firm, cutting them off from a potentially valuable source of information.

Hedges⁶ states that full transparency may not be as valuable to investors as they might think. While the disclosure of all positions may seem like important information to investors, a current snapshot of holdings does not necessarily give one the information necessary to understand the risk exposures or the trading strategy of the hedge fund. In fact, the full disclosure of position data may be confusing to investors. An interesting compromise is for managers to disclose aggregated data about the fund's investment positions. Rather than revealing the specific securities, the fund would provide investors with summary data that calculates statistics that can be used to assess the risk of the fund. This data can range from the leverage and diversification of the fund, to the distribution of positions across various fixed income and equity sectors. The release of aggregated fund data assures the fund manager that their position information is not revealed to the market. Similarly, the investor can benefit, as the aggregated risk exposures of the fund provide a clearer understanding of the fund's risks than would be provided by full disclosure of the fund's holdings. It is important to note here that Hedges suggests that the risk exposures will be disclosed to the investor directly by the fund manager. We will return to the importance of this point later in the paper.

Hedges also describes how managed accounts, or separate accounts, can provide the safest, and most transparent, arrangement for investors. In a managed account, the assets managed by the hedge fund manager remain in the investor's account at a brokerage firm. The investor retains custody of the assets, so it is not possible for the fund manager to withdraw the funds. Given that

the account belongs to the investor, they have the ability to access account positions, balances and performance in real time. This allows the investor to see returns on a much more frequent basis, if desired, when compared to the monthly returns provided to most hedge fund investors. There will likely be no question about the valuation of the securities in the account, as the price of the positions will be determined by the custody bank or broker, and not by the fund manager. The investor has the ultimate in liquidity in a managed account, as the fund manager has no legal right to impose lockup periods or request that withdrawals are made at quarter end with 60 days notice.

Unfortunately, transparency is not the only area where manager and investor interests may come into conflict. The hedge fund manager wants to maximise the dollar amount of management and incentive fees earned by their fund. Therefore, it is in their best interest to retain the investor's assets for longer periods of time, and to report the highest possible performance. However, whenever hedge fund managers earn high fees, this directly reduces the return to their investors. While the vast majority of hedge fund managers are honest and hard-working, these fee structures can tempt some managers to misstate performance, especially during a period of underperformance. When funds are chosen on the basis of risk-adjusted returns and incentive fees are paid on reported returns, some managers may manipulate reported returns to enhance their income or to maximise the probability of retaining investor assets. This gives managers the idea to quickly report large gains, while being slow to report losses. If losses are smoothed over a long period of time, the fund appears to have higher returns and lower volatility, which can assist in the

retention of assets. Investors should be especially careful when the reported returns of a fund are far above those of funds with similar objectives. Additionally, investors should be concerned when a fund suddenly becomes less correlated to market risk factors or funds with similar investment objectives, which is likely when a fund is manipulating returns to avoid showing losses similar to or greater than those earned on similar investments.

THREE RECENT FRAUDS HIGHLIGHT THE IMPORTANCE OF OPERATIONAL RISKS

Bayou Management, LLC

The details of the alleged fraud at Bayou Management, LLC, is described by several reporters⁷⁻¹¹ from the *New York Times* and *The Wall Street Journal*. Samuel Israel III claimed to manage a long-short equity fund with over \$400 million in assets under management. While there were many red flags that could have been seen during an initial due diligence review, the commitment to on-going risk monitoring of the fund could have saved investors from this meltdown.

To start, Israel's fund should have failed any standard due diligence checklist if the investigators looked in the right places. Israel's resume overstated his position and his tenure at Leon Cooperman's Omega Advisors. While Israel claimed to have been a head trader at this large, well-respected, hedge fund from 1992 to 1996, this turns out to have not been true. Reference checks found that Omega claimed that he was an employee for only 17 months in 1994 and 1995, and had not had trading authority at the fund. While Israel claimed that Bayou had started in early 1997, it seems that the

fund may have been started in late 1996.

The later start date allowed Israel to conceal significant losses during the first several months of the fund's operations.

Tran's suggestions to check the auditor relationship would also have been helpful here. It is alleged that the CFO of Bayou, Daniel Marino, was the principal of the firm's auditor, Richmond-Fairfield. While Bayou claimed that Grant Thornton was its auditor in 2002, the reputable auditor told *The Wall Street Journal* that they had ceased auditing Bayou's returns a few years earlier. Bayou was also an NASD-registered broker-dealer, where all of Israel's trades were cleared by his own brokerage firm. For a fund that claimed to execute very frequent trades in the equity markets, earning a commission on a large number of trades may appear to some to be a conflict of interest.

While Israel claimed to earn profits through long and short positions and frequent trading in equity securities, there was not nearly enough trading volume in the fund's accounts in the last 18 months of the fund to justify claims that the fund was still following this strategy. While Bayou may have initially traded in the manner that was disclosed to, and agreed on by, investors, the trading slowed down significantly. What likely happened is that the fund had earned significant trading losses in the most recent two years of the fund. Marino's in-house auditing firm disclosed incorrect returns to investors in order to retain the assets and to continue earning the incentive fees on the erroneous profits. Bayou claimed to have managed \$400 million in investor assets, but bank records only showed \$160 million.

Some shrewd investors, such as Tremont, withdrew their assets when some of the red flags

were revealed. This fund manager's redemption request was a result of finding significant differences between the reported returns of Bayou's onshore and offshore funds. When questioned, Israel gave a disappointing answer about reallocating profitable trades from one fund to the other in order to equalise performance. Tremont's ongoing due diligence process was very profitable, as they were able to withdraw their assets before the demise of the fund.

As is often the case, the alleged fraud was perpetrated by Israel and Marino, without the knowledge of any of their employees. While Bayou had a board of directors, it seems that Israel and Marino constituted a quorum of the board. Unfortunately, the two voted to move \$100 million in investor assets to a bank account in Israel's name. While the state of Arizona was able to flag and seize this \$100 million as the likely proceeds of financial fraud, the remainder of investor assets remains unaccounted for.

Wood River Capital Management

The alleged losses at Wood River Capital Management are described by Cantrell.¹² Wood River was a \$265 million equity hedge fund. The offering memorandum given to investors stated that 'individual long positions would typically be capped at 10 percent of the portfolio'. It seems that Wood River failed due to unauthorised trading, as the most significant losses in the fund came from one stock that was over 25 per cent of the value of the fund. Of course, this large concentration is contrary to the offering memorandum, which investors relied on when making their decision to allocate assets to the fund. Taking concentrated positions is not illegal when it is specifically allowed in the

offering memorandum. However, trading in excess of the risk limits provided to investors may likely subject Wood River to civil liabilities for the trading losses.

Wood River's trading losses were incurred in Endwave, a small capitalisation stock that declined in value from \$54 to \$14 per share between July and October of 2005. Investing over 25 per cent of the firm's capital in a stock that declines 75 per cent is a significant market risk event that could lead to significant losses and likely liquidation of any fund. It is important, here, to note the interaction of market risk and operational risk in this case. Clearly, the 75 per cent decline in the value of one stock is the definition of market risk. This fund failure would be solely attributed to market risk should Wood River's initial position in the stock have been less than the self-imposed 10 per cent limit. However, when the size of the position exceeded the 10 per cent holdings limit, this became an operational risk issue, as the increase in the size of the position was unauthorised by the investors.

An interesting loser in this fund was Lehman Brothers, the firm's prime broker. Lehman stated that Wood River placed an order to buy \$20 million in Endwave shares. When Lehman executed the trade, Wood River is alleged to have not settled the trade as promised, leaving Lehman responsible to pay the seller of the shares. Unfortunately, Endwave shares dropped quickly, leaving Lehman Brothers with an \$8 million loss.

Lancer Group

The story of Lancer Group is chronicled in *Forbes* magazine by Condon.¹³ It seems that Michael Lauer would have passed any type of pre-investment due diligence checks. Lauer had

the pedigree that other hedge fund managers dream about, as he was a graduate of Columbia University and a six-time member of Institutional Investor's all-star equity analyst team.

As at Bayou and Wood River, Lancer focused on trades in equity securities. This time, there was a mix of private and public shares, typically of very small capitalisation companies. Lauer's investors allowed him the personal discretion to value the restricted shares of these illiquid holdings. This violates one of the cardinal rules of operational risk management: Never allow a portfolio manager the ability to price his own positions, especially if his income depends on those valuations. If you allow a portfolio manager to value his own holdings, the temptation to earn high incentive fees may overcome his naturally honest personality. The higher the valuation of the fund's securities, the higher the incentive fees earned by the fund. However, if the shares cannot be sold at the inflated price, the large incentive fees can quickly deplete the assets in the accounts. Over a three-year period, Lauer is reported to have earned management and incentive fees totalling \$44 million. The fund raised \$613 million in investor capital, net of redemptions. While Lancer valued the assets at \$1.2 billion, at the end of the day, the fund actually held only \$70 million.

Lauer declined to offer transparency to his investors, as he refused to identify the companies that were owned in the portfolio. As his fund was filled with large positions in illiquid shares, his hesitancy to reveal the names of his holdings could have been related to the large market impact that other traders could inflict on the value of Lancer's stocks.

Condon describes how Lancer allegedly purchased large stakes in unregistered shares.

Financial theory tells us that unregistered shares should trade at an illiquidity discount when compared to the freely floating shares issued by the same firm. Lauer is said to have purchased 1.7 million unregistered shares in SMX at 23 cents per share. While the company had no operations, the fund valued the company at nearly \$200 million in market capitalisation. Hedge fund valuations are typically calculated at the end of each calendar month, using the last prices traded in each holding. Lancer, and other hedge funds, may participate in 'window dressing' by making trades that are designed to manipulate the month end prices of large holdings. At the end of a month, Lauer was reported to have purchased 2,800 of the freely floating shares at \$19.50 per share, a large premium to the price trading just minutes earlier. Later in the year, he purchased 1,000 as the last trade of the month, this time at \$27. These small trades in the registered, tradable shares were used to mark all 5.7 million shares in the fund at a gain of 8,000 per cent over the purchase price. Not only were the public shares not able to be sold at this price, but the restricted shares would likely trade at an even lower price.

Unfortunately, Price Waterhouse Coopers, who served as Lancer's auditor, eventually published an audit verifying these valuations. The firm asked for full appraisals on ten companies, yet only received four. Those four appraisals were written by a biased party that may have had an ownership stake or a financial interest in the target companies. In the end, the audit stated that most of the fund value was based on unrealised gains, with prices based on the manager valuation. They do not seem to have questioned the ultimate valuation of the target companies, leaving investors to decide from the

auditor's language whether or not Lauer's valuations were warranted.

Because investors gave Lauer discretion in valuing the shares, he may have legally been able to do so, even at these extremely high prices. However, there was one illegal activity that Lancer may have perpetrated. Condon explains that Lancer did not file a form 13D on 15 companies, which the SEC requires whenever an investor owns greater than a 5 per cent stake in a firm. Had he filed these 13D reports as required, careful investors may have been able to understand the significant illiquidity risk in the fund.

Eisinger⁸ describes the potential of similar window dressing issues at JLF Asset Management. This hedge fund manager owns over 5 per cent of four different publicly traded companies. Each of these companies increased in value by 3–8 per cent in the final minutes of August 2005, when the Russell 2000 increased by only 2 per cent in the entire day. While the paper did not access the trading records of the hedge fund, the circumstantial evidence seems to have many similarities to Lancer.

RED FLAGS IN THE HEDGE FUND INDUSTRY

Bollen and Krepeley¹⁴ offer a proposal to the SEC to build a quantitative system that can flag the hedge funds that may have the highest potential for operational risk failures. This time series model searches for asymmetric serial correlation in returns. Hedge fund managers can maximise their incentive fees or attempt to cover trading losses when they are quick to report large gains and slow to report smaller losses. Only 4 per cent of funds in their sample show this return pattern. This can quickly focus the

due diligence efforts of the overworked SEC on a relatively small corner of the hedge fund universe.

Once the investigator has found this smaller sample, a more comprehensive look at the risk of each individual fund is undertaken. Funds may legitimately show this return pattern if their holdings typically contain purchased options. For funds that fail the quantitative screen, the presence of additional red flags can be a very strong signal that this could be a fund with a significant probability of operational failure. Funds that seem to be misrepresenting their returns will exhibit an asymmetric smoothing of returns, where they are quick to report gains, but smooth losses over an extended period of time.

One of the most important risk factors found by Bollen and Krepeley¹⁴ is the presence of a significant volatility of investor cash flows. Funds that raise a large amount of assets may have problems investing at a higher scale, while funds with significant withdrawals may have other investors who have discovered issues that made them uncomfortable with the risks of the fund. Funds with large withdrawals may be tempted to misrepresent returns in order to prevent other investors from also exiting the fund.

A PROPOSAL FOR PARTIAL TRANSPARENCY

What policy prescription can we propose as a result of these recent hedge fund failures and our focus on operational risk? If full transparency is not offered by hedge fund managers or valued by investors, perhaps it is best that investors not demand complete knowledge of the fund's positions and trading strategies. It is

recommended that investors access a system of partial transparency that searches for clues that betray both the operational and market risks of a hedge fund.

It is imperative that the partial transparency system be provided by a third-party valuation or software firm. This firm would have an expertise in financial modelling, and would have strict controls on the confidentiality of its data and the trading behaviour of its employees. The data input to this system MUST be provided to the aggregating firm directly by the hedge fund's custodial banks and prime brokers. Given that we are dealing with operational risk, we need an independent verification of assets, positions and returns. Otherwise, if we relied on the fund manager to provide the inputs to the system, as proposed by Hedges,⁶ they could provide fraudulent positions nearly as easily as they provide fraudulent returns to their investors, which would render our operational risk system ineffective.

The inputs into the market risk system are well known, and have been documented by the many contributors to Parker.³ With the position data provided by all parties in custody of the assets of the hedge fund, the aggregator will calculate the risk exposures. The report to investors or regulators would contain only aggregated data, thus protecting the valuable position level data of the fund.

The market risk report would contain the following statistics:

Total investor capital (assets under management),
Total dollar value of positions, which can be used to calculate leverage,
Total notional value of positions for derivatives,
The total size of long and short positions in each exchange-traded market:

Stocks, options and futures

The total size of long and short positions in each OTC and restricted liquidity market:

Options, swaps, fixed income securities, restricted stock, venture capital

The net exposures to market risk factors:

Beta, duration, convexity, yield curve risk, volatility, equity multiples, etc.

The range and average market capitalisation of equity securities

The credit rating distribution of fixed income securities

The sector distribution of futures, options and equity securities

Liquidity statistics:

Total dollar value traded in the fund each time period

The total dollar value traded as a per cent of total volume in that security

The size of each position as a portion of average volume

The per cent of each issue owned

Diversification statistics

Size of the largest position

Size of the average position

Number of positions owned

The inputs into the operational risk system may be less obvious or well known:

Total investor capital (assets under management)

Investor cash flows — contributions to and withdrawals from the fund

Change in trading volume

Change in types of instruments traded

The relationship of returns of the fund to other funds in the same trading style

The source of and process for valuing OTC positions

An estimate of performance, with marks directly from brokers or pricing services:

At month end, to match to the manager's return estimate

At a random mid-month date, to detect window dressing

It is easy to see the application of the market risk statistics. If leverage, position sizes or factor risks are too large, the investor can ask the manager to reduce the position. Alternatively, the investor can implement their own hedging strategy or search for a manager with a more comfortable risk profile. The liquidity statistics are important, as they feed directly into the operational risks of valuation. For example, the liquidity statistics could have detected that Wood River's Endwave position was larger than that allowed by investors. These statistics could have also detected Lancer's failure to file the required 13D forms with the Securities and Exchange Commission.

The application of the operational risk statistics directly follow from the case studies of recent hedge fund frauds. Bollen and Krepely¹⁴ show the importance of the volatility of assets under management. A rapid decline in assets may show the misappropriation of investor funds. We would hope that the sooner this activity is revealed, the greater the probability of recovering a significant portion of the investor funds. If Bayou overstated their assets under management, this misrepresentation would be revealed on the operational risk report. If the manager is misstating the amount of AUM, they may also be untruthful in other areas. AUM is an important issue, as many large investors are unable to commit assets to a fund until the manager has reached critical mass. The requirement of a large asset base, perhaps over \$100 million AUM, can ensure that the institutional investor will not control the

majority of the fund's assets, but also that the fund manager has significant experience trading with this asset size. Trading larger blocks of securities can be much more complicated than the experience of trading in a smaller account.

We could also see how Bayou's significant decline in trading volume may have revealed that the fund was planning on liquidating many months before over \$100 million was moved into the fund manager's personal account. The mid-month return estimate would be effective at valuing Lancer's positions at closer to their true market value, rather than the manipulated value at the closing minute of each month. A change in trading volume and the types of instruments traded can show the potential for style drift or the preparations for the liquidation of the fund or the theft of investor assets.

Bayou, Wood River and Lancer typically stated that they traded equity securities. Exchange-traded securities, such as stocks, futures and options, have little model risk or valuation risk. Once the exchange sets the closing price for the day, it is easy to apply that price to the positions within any investment account. Tran⁵ shows the difficulty of valuing securities that are not exchange traded. Given that hedge funds enjoy earning the return premiums of holding illiquid securities, these difficult to value positions are becoming an even larger portion of hedge fund holdings. Consider the wide range of fixed income securities, including convertible bonds, junk and distressed bonds, and mortgage-backed securities. Because many of these bonds are issued in small sizes, the trading volume may be very low. If weeks, or months, pass since the last trade of a specific security, the issue can be difficult to value, even by an honest and intelligent analyst. Not only are these issues illiquid, but they can be

subjected to significant model risk, as the pricing process can require estimates of volatility, correlation, credit spreads and mortgage pre-payment rates. Even soliciting broker quotes can be problematic, as the brokers may provide a wide range of prices, especially for securities with wide bid-offer spreads. Valuation becomes even more imprecise for complex OTC derivatives or private equity positions.

CONCLUSION

Most hedge fund investors are familiar with the methods and data required to calculate the market risk of a fund. However, not all hedge funds will provide the transparency required to calculate these statistics. Even if investors could get accurate market risk statistics, much less attention has been paid to the detection and prevention of operational risk.

When managers are reticent to provide complete transparency, investors should be pleased to have the opportunity to purchase reports on market risk and operational risk that have been aggregated from information provided directly by the fund's brokers and custodians. Investors who are able to see complete risk information may have the opportunity to request and receive a redemption of their investment months or years before the fund might fail due to these risks.

Finally, if this concept becomes more popular, hedge fund managers who consent to partial transparency may be seen as a less risky option. Tran⁵ states that the funds that provide audited returns report more accurate returns and have a lower probability of failure. Perhaps funds that consent to partial transparency will have similar

statistics, as investors would view these funds as the ones that have nothing to hide — even if they refuse to reveal the specific stocks in their portfolio.

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