

Valuation issues and operational risk in hedge funds

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Abstract

In our recent study on the root causes of hedge fund failures, we identified a number of operational risk factors that together seem to account for approximately half of catastrophic cases. Issues related to valuation - the determination of fair-market-value for all of the positions that make up a fund - underlie many of these operational risk factors. Recently, valuation problems have also been much in the news. These headlines suggest that the industry is not yet taking the steps needed to address problems in the valuation process. In fact, we believe that issues related to valuation of portfolios will likely become the next major 'black eye' for the hedge fund industry. Unless certain practices discussed in this paper become more widespread, we believe that hedge funds face a potential crisis of confidence with institutional and high net worth investors. Therefore, we are using this paper to consider the issues related to the valuation of hedge fund portfolios more closely, in particular as they pertain to the issue of managing operational risks associated with hedge fund investments.

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Introduction

In our recent study on the root causes of hedge fund failures, we identified a number of operational risk factors that together seem to account for approximately half of catastrophic cases¹. These factors included misappropriation of funds and fraud, misrepresentation, unauthorized trading or trading outside of guidelines, and resource/infrastructure insufficiencies. Issues related to valuation – the determination of fair-market-value for all of the positions that make up a fund – underlie many of these operational risk factors. Most instances of fraud and misrepresentation involved some form of deception regarding the value of assets held by the fund, and many of the resource/infrastructure problems we studied eventually manifested themselves through some form of inability to accurately price or risk the funds book. While valuation issues were not specifically identified in our original study as a major category of operational risk on its own, various aspects of the valuation problem have played either a primary or contributing role in more than a third (35%) of cases of failures that we studied.

Recently, valuation problems have also been much in the news. They figure prominently in the SEC's staff report on 'Implications of the growth of hedge funds,' in news accounts of a high-profile departure of a top fund manager at a leading hedge fund group, and in the recent market-timing scandals in the mutual fund world (it being an issue with mutual fund valuations that creates the opportunity for market timers in the first place).

These headlines suggest that the industry is not yet taking the steps necessary to address problems in the valuation process. In fact, we believe that issues related to valuation of portfolios will likely become the next major 'black eye' for the hedge fund industry. Unless certain practices (discussed below) become more widespread, we believe that the hedge funds face a potential crisis of confidence with institutional and high net worth investors. Therefore, we are using this paper to consider the issues related to the valuation of hedge fund portfolios more closely, in particular as they pertain to the issue of

managing operational risks associated with hedge fund investments.

What is the valuation issue?

The issue around valuations in hedge fund portfolios concerns how to ensure that a fund uses fair and proper prices for positions that are held in the fund. The net value of these positions, after fees and expenses, is the Net Asset Value (NAV) of the fund, and is used as the basis for all subscriptions, redemptions, and performance calculations.

For some types of investments, in particular for non-concentrated positions in liquid securities, fair and impartial valuations are fairly easy to achieve – recent transaction prices as well as marketable bids and offers are readily available and are visible on major wires and feeds, such as Bloomberg and Reuters. But, for many other investments favored by some types of hedge funds, this is not necessarily the case. Some securities may trade infrequently and transactional prices may not be available. In these cases, broker quotes must be sought to get a sense for what the position is worth. Some securities are highly complex, and may be difficult to value without the use of a mathematical model. However, in thinly traded markets quotes can be difficult to obtain and may be unreliable (broker quotes for some types of mortgage backed securities can easily vary by 20-30%). Mathematical models make use of assumptions and forecasts that are subjective and open to question.

Put these natural, inherent difficulties in pricing complex or illiquid investments together with a powerful financial incentive to show strong (or hide weak) performance, and then situate these factors in an environment with minimal regulatory oversight, or without strict discipline and internal controls (still far too typical in the hedge fund industry), and there is potential for trouble.

Trouble is precisely what the industry has seen. At Lipper Convertibles, a convertible bond hedge fund that recently collapsed, it appears that several portfolio managers made use of

¹ Feffer, S., and C. Kundro, 2003, 'Understanding and mitigating operational risk in hedge fund investing,' white paper series, Capco Institute, March

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the opacity of the convertibles market to misvalue their portfolio significantly. Similar issues were behind the collapse of Beacon Hill and others.

It certainly seems that these kinds of issues are increasing in their frequency, severity, and visibility. This has been driven by three key trends:

- **The increasing sophistication of financial instruments** - New types of structures are invented constantly. Their complexity often make them difficult to price, and it can be very difficult to guarantee standard or accurate pricing procedures. In many of these cases valuation issues can be compounded due to the inherent or synthetic leverage of many of these instruments.
- **The increasing number of funds that are using complex instruments** - As the hedge fund market grows, new managers are emerging every day, and many of them are focused on parts of the market where pricing and valuation issues are most prevalent.
- **A broadening investor base** - Institutional investors are increasing their allocations to hedge funds, and some types of institutions which have not previously been sizable hedge fund investors (e.g. pension funds) are aggressively entering the market. In addition, many funds-of-funds are looking to push hedge fund like products to middle-market and affluent retail investors. This has increased attention to the sector, and is resulting in increasing regulatory and media scrutiny.

Because of this increased attention to hedge funds at a time when the factors that make pricing and valuation difficult are becoming even more prevalent, we believe that valuation problems will likely continue to occur, and to attract significant attention from the financial and general business press.

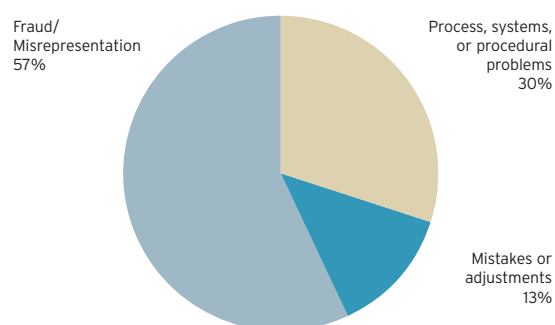
Causes of valuation problems

When there are valuation problems at a fund they are generally caused by one of three factors:

- **Fraud/misrepresentation** - Occasionally a valuation problem will be part of a deliberate attempt to inflate the value of a fund, either to hide unrealized losses, to be able to report stronger performance, or to cover up broader theft and fraud. This appears to have been true, for example, in the case involving the failure of the Manhattan Fund.
- **Mistakes or adjustments** - As mentioned above, some securities frequently traded by hedge funds can be extremely difficult to value. And even when prices are readily available, some positions may require adjustment anyway - positions that comprise a large proportion of a single issue, for example, should be discounted to reflect the likelihood that they cannot be liquidated without a significant market impact. Also, if a security is held in a large enough quantity where public disclosure (i.e. Schedule 13D) is required, an adjustment may need to be made if all or part of the position can not be sold anonymously. Occasionally, positions will simply be mis-marked, and may cause a sudden and unexpected impact to fund valuation when the marks are corrected or the position is reversed. There can also be a significant variation depending on which 'correct' price is being used - i.e., the bid, offer, or mid-point - especially when it comes to thinly traded or illiquid instruments where bid/offer spreads can be sizeable.
- **Process, systems, or procedural problems** - There are times when a fund may be following its own policies consistently and accurately, but a flaw in the valuation procedures or processes cause a systemic mis-marking of the book. This is most common in cases where a fund is trading instruments that cannot be handled by its regular processing systems and some kind of workaround is devised which later proves to be flawed. Issues that may occur are not limited to incorrect pricing. Entire positions can be incorrectly captured on the fund's books and records. Sometimes total positions are completely excluded in error. Mortgages, bank loans, OTC derivatives, convertible bonds, and non-dollar instruments of all kinds can be prone to these kinds of issues if underlying systems do not fully support them.

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Sometimes, even when technology support is robust and procedures are both well-defined and widely monitored, flaws in the valuation process can have wide-ranging effects. In the recent mutual fund market-timing scandals, for instance, it was a flaw in the basic rules around fund valuations (reporting values as of the end of the standard market day in the U.S., without adjustment for news that may have moved markets) which created much of the opportunity for market timing in the first place.



Causes of valuation issues implicated in hedge fund failures

Other procedural factors that can affect valuation include: when a quote is being obtained from a third party (e.g., broker/dealer) as a basis for valuation, questions related to which third party and who at that third party can be critical. Is the broker/dealer a counterparty to that transaction and therefore has a potential conflict of interest? Is the individual providing the quote a junior or senior executive and are they truly capable of providing an accurate price, especially when complex modeling is involved? The point is that sometimes 'the devil is in the details,' namely the task level procedures for obtaining prices on a regular basis.

In cases of hedge fund failures where valuation was a primary or contributing factor (35% of the total), we found that fraud and misrepresentation was the cause in 57% of cases. Process, procedural, or systems problems accounted for 30% of these valuation-related failures and mistakes or adjustments were implicated in the remaining 13%.

We believe that the likelihood of all of these types of valuation problems occurring can be reduced and their effects mitigated should they occur, if the hedge fund industry begins to adopt some sound practices that have been common in other parts of the financial industry for some time. These are discussed in more detail below.

Some strategies are more vulnerable than others

While it is possible for any fund to experience valuation issues, it has been our experience that some types of funds are more prone to the problem than others. Unless there is some kind of broader fraud or malfeasance, funds that invest exclusively in highly liquid instruments for which prices are readily available (most U.S. and major-market equities, for example) are far less likely to significantly mis-mark a portfolio than funds that trade complex over-the-counter instruments or illiquid securities.

We believe fund managers and investors should take particular care in looking at valuation procedures for the following types of instruments:

- **Convertible bonds** - These can be extremely complex to value and have limited liquidity. Broker quotes for convertibles can vary significantly for the same issue, and it can be difficult to determine the size for which any given quote is good. (In one convertible portfolio we recently studied, for example, the average difference between highest and lowest bid on the same issue was around 5%, with the largest deltas as high as 20%).
- **Mortgages, mortgage-backed securities, and asset-backed securities** - These are also difficult to value and may be subject to both liquidity problems and high dispersion of market-maker quotes. They also have special processing requirements, and most firms that trade them must use a dedicated system for booking, valuing, and processing these securities. Funds that trade these instruments as part of a broader fixed-income strategy, therefore, will often be carrying mortgage and asset-backed securities on a different system from the rest of the portfolio, requiring either integration or manual

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intervention to consolidate. These systems and procedures should get special attention by fund management or during investor due diligence.

- **Credit default swaps** - Credit derivatives are growing in popularity and are often used by hedge funds to take on credit exposure or to hedge a portfolio. Depending on the specific circumstances of the issuer covered by the swap, these can also be difficult to unwind and market-maker quotes can be difficult to obtain.
- **Other over-the-counter derivatives** - New types of complex swaps, options, and hybrids are being developed constantly, and some hedge funds will make use of highly customized instruments in their portfolios. Procedures for valuing and booking these trades should receive special attention.
- **Bank debt and loans, distressed debt** - These are often both illiquid and difficult to model, requiring significant credit expertise.
- **Non-dollar and emerging markets** - Many funds that begin with a focus on U.S. markets will put in place an infrastructure that accommodates U.S. dollar-denominated securities, but may not properly book and track non-dollar securities. This additional processing complexity can, if these funds begin to trade in other markets without upgrading their infrastructure, create an environment that is more prone than average to valuation mistakes and processing problems. Securities issued in some emerging markets, even when a fund is experienced with non-dollar investing, can be difficult to value and may be subject to liquidity concerns as well.
- **Highly concentrated positions, and positions that make up a large proportion of a single issue** - As mentioned above, these types of positions (even when in a highly liquid security that is not difficult to price) may require adjustments to reflect the true liquidation value of the position, and the fact that it cannot be disposed of without a significant market impact.

It is worth noting that while complex, thinly traded, or illiquid instruments are more likely to have pricing issues. In fact, even

fairly actively traded securities with prices readily available from independent third party sources can occasionally be 'stale' due to bad market feeds, human error, or other issues. This has also been publicly discussed as an issue with mutual funds in recent months. Investors should take steps during due diligence to ensure that all automated prices are validated prior to month-end valuations and as part of other reporting and subscription/redemption cycles.

Recommendations to the hedge fund industry

We believe that the aforementioned problems could be largely mitigated or averted if the hedge fund industry were to adopt some practices related to valuations that have long been common in other parts of the financial sector. In particular, fund management companies and investors should: 1) Insist on strict independence and separation of duties; 2) Ensure consistency in the valuation process, and; 3) Require a level of management supervision and oversight. More details on these recommendations are included below.

The Managed Funds Association has published a set of 'Sound Practices for Hedge Fund Managers,' which they recommend for adoption by the hedge fund industry,² and the International Association of Financial Engineers' Investor Risk Committee has published a description of concepts related to valuation that they recommend as a basis for discussion between financial institutions and stakeholders.³ While we agree with virtually all of the concepts and practices that these organizations endorse, we believe that they do not go far enough in advocating more robust controls around valuations. Therefore we make the following suggestions.

Insist on strict independence and separation of duties

Separation of duties and independence in mark-to-market has long been a fundamental principle of control in financial institutions, but is still inconsistently applied in the hedge fund industry. A breakdown in separation of duties seems to have been a factor in almost every valuation-related hedge fund failure that we have studied. In short, independence and

² Managed Funds Association, '2003 Sound Practices for Hedge Fund Managers,' published and distributed by the Managed Funds Association, Washington, DC, 2003.

³ International Association of Financial Engineers, Investor Risk Committee, 'Valuation concepts for investment companies and their stakeholders,' IAFE, 2003.

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separation of duties means that the person who performs checks or approves valuations should not receive incentives or inducements based directly on the performance of the investment being valued, and should not report to managers who do.

The trader or portfolio manager should never perform final valuations (it often makes sense, however, for the trader or manager to do their own valuation as a 'reasonableness check' on an independent process), and wherever possible an independent third-party should check valuations prepared by the manager themselves. Wherever possible, a fund manager should keep a financial/accounting staff independent of the portfolio management team to prepare and validate marks-to-market. In most cases, these staff will report to the CFO or the COO of the fund management company, and should be compensated based on the overall profitability results of the management company rather than directly based on the performance of any of the investment vehicles managed by the firm.

In some cases fund administrators will perform this role for a fund manager. Some valuation services will also prepare marks on an 'outsourced' basis for a fund manager. Many funds will also employ an auditor to test valuations used for financial statements to investors. We believe that a fund manager should always use an external third party to verify that portfolio valuations are accurate before they are reported to investors. This would be in addition to the fund auditor, who often will examine valuations less frequently and after they have been reported.

Ensure consistency in the valuation process

Daily mark-to-market and monthly/quarterly pre-statement valuations should always be performed according to a well defined process. The application of sources, methods, rules, and models should always be applied consistently, with any deviations or unusual circumstances clearly noted and documentation saved.

These processes may change over time in response to changes in the markets for certain types of securities, to make

use of better information, or for other good management reasons. However, when it appears that valuation choices are made situationally, without a clearly documented rationale, we believe that an investor should seriously consider the safety of their capital.

Require a level of supervision and oversight

If the fund manager performs valuations themselves, there should be a set of clearly documented policies and procedures, as well as a way of ensuring that those policies and procedures are actually followed in practice - generally through external validation, testing, and audit.

After the collapse of Lipper Convertibles, Ken Lipper who ran the management company, commented to the media through his attorney that he was unaware of any mispricing issues prior to the collapse of the fund and that it had been valued by the portfolio managers responsible for investing it. To us, if true, this represents an abdication of management's duty to oversee the valuation process. Management should review valuations, and there should be evidence that pricing discrepancies have been brought to management's attention and that action has been taken when appropriate. Especially in a fund that invests in the problem-prone instruments mentioned above, a certain number of honest valuation discrepancies are inevitable. Whether a fund manager acknowledges that they occur, how they handle them, and whether they document the results can speak volumes about the quality of supervision over the valuation process. This management oversight is critical to ensuring the soundness and safety of investor assets in a fund.

Sometimes it can be smart for a fund manager to outsource some of the mechanics to a third party pricing service. Even in the case of complex instruments - such as certain OTC derivatives and asset-backed securities - there are service providers that can price them and also offer operations outsourcing and risk management services as well. We believe that any move which increases the independence and objectivity of the valuation process should be viewed positively by investors.

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Conclusion

Clearly, pricing and valuation has become a significant issue for the hedge fund industry, and we believe that its significance is likely to increase - particularly as it relates to funds that trade strategies and instruments that are particularly prone to the types of problems we discuss here. But there are a set of practices, long standard in other parts of the financial sector, that we believe can mitigate losses and prevent problems, at least in many cases. We further believe that they represent the hedge fund industry's best chance at avoiding a damaging public 'black eye.'