

An **OTC Valuations** White Paper



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Independent pricing for complex derivatives and illiquid, hard-to-value, securities

*Trends and current practices at
Hedge Fund Administrators*

November 2008



Derivatives Understood™

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OTC derivative valuation practices are becoming increasingly important for hedge fund administration providers, not only regarding valuation capabilities but also transparency surrounding valuations.

Introduction

The credit crunch, which began in summer 2007, has demonstrated that the valuation of illiquid and hard-to-value assets is clearly one of the most significant issues affecting confidence in the financial industry today. As hedge funds grow in size and complexity, derivatives valuation practices are becoming increasingly important for hedge fund administrators, investors, and regulators. The continued growth and usage of OTC derivatives, increasing complexity of derivatives, and the recent credit crisis have sparked renewed debate and interest among regulators, investors, and buy-side firms to address the issue of valuing derivatives. At the forefront of these discussions are improving disclosures and enhancing valuation transparency, with the greatest need for disclosure and transparency for complex and illiquid securities and derivatives.

“With an increase in differing investment mandates significantly changing the market, administrators are required to deal with the changing complexities of instruments by moving away from the plain vanilla.”

Jason Bibb
Managing Director
ISIS Fund Services

Market and industry pressures to curtail market risk and improve valuation transparency has renewed interest within hedge funds to focus on implementing the proper controls and procedures to ensure they are effectively managing risk and enhancing performance. A call for such controls is highlighted further by the increasing influence and importance institutional investors place on back-office operations at hedge funds. The influence of the institutional investor is such that it has not only led to administrators playing a more prominent role in the valuation process, but has also caused them to improve their operations and service offerings.

Since asset valuations underpin the credibility of the hedge fund industry, accurate and timely valuations of a hedge fund's assets are of critical importance. With this in mind, accurate and timely asset valuations, particularly with respect to complex OTC Derivatives, are arguably the most important and difficult of the responsibilities Fund Administrators and other third party valuation service providers are charged with and as such will be the topic and focus of this White Paper.

Best practices suggest that conflicts of interest can be avoided by using multiple price sources and independent valuation service providers.

Regulator, Investor, and Industry Response

To address valuation issues, a number of regulatory bodies have published best practices and principles designed to provide for greater disclosure, valuation transparency, and improve valuation procedures.

Among the guidance provided by the Alternative Investment Management Association (www.aima.org) for hedge funds, their Guide to Sound Practices for Hedge Fund Valuation (2007) suggests that conflicts of interest in the valuation process can be avoided by appointing an independent valuation service provider and, wherever possible, multiple price sources should be used to validate the valuation of each instrument. Regardless of the pricing source, all valuations should be conducted using a consistent and tested valuation process.

“Transparency around pricing is an increasingly important focus for hedge fund investors, particularly with regard to the pricing of hard-to-value securities.”

Dermot Butler
Chairman
Custom House Administration

The International Organization of Securities Commissions (IOSCO) has provided some insights into valuing investment portfolios of hedge funds and the challenges that arise in valuing complex financial instruments. The primary objectives of the principles outlined by IOSCO’s Principles for the Valuation of Hedge Fund Portfolios (2007) are to ensure hedge funds’ positions are valued accurately.

Using nine principles, IOSCO, like AIMA, suggests that valuation procedures should be well documented and the valuation process should have the appropriate level of independence. In order to avoid the conflicts of interest that can arise from an investment manager’s influence over the valuation process in situations where a hedge fund is unable to establish appropriate levels of independent valuation and reporting lines within the hedge fund, IOSCO recommends consideration of the use of a qualified independent third party valuation vendor. AIMA, in their Guide to Sound Practices for Hedge Fund Valuation (2007), state “conflicts of interest in the valuation process are usually best managed by the appointment of an independent and competent valuation service provider”.

Investors are driving the trend towards independent valuations as they seek more frequent and detailed disclosures from hedge funds.

More recently, the Presidents Working Group (PWG) has suggested that a “description of the methodologies used to value the fund’s investment positions, including the methodology used in valuing various types of investment positions and the use of internal and external pricing sources” should be considered when assessing a fund’s valuation framework (See Presidents Working Group, 2008).

The trend towards “independent” valuations is at least partly explained by the growing presence of institutional investors in the Hedge Fund Sector and the desire of these investors to have independent checks protecting their investments. The increased allocations of Pension Funds, Endowments, and other trusts is essentially forcing Asset Managers and their Administrators to enhance the quality of their offerings, particularly with respect to accurate, timely, and independent asset valuations.

“Many asset managers no longer believe that counterparties are the best source for daily valuation of over-the-counter (OTC) derivative instruments given their lack of independence.”

Cherie Graham
Head of Derivatives Product Group
Brown Brothers Harriman

Hedge Fund investors, particularly institutional investors, are seeking more frequent and more detailed disclosures so that they can make informed decisions as to whether or not to invest (or continue to invest) in a fund as well as becoming better informed with respect to the fund’s risks and exposures. In a recent survey by the President’s Working Group (PWG, April, 2008), mention was made of “strong disclosure practices that provide investors with the information they need to determine whether or not to invest in a fund, to monitor an investment, and to make a decision whether to redeem their investment”.

Hedge Fund Administrators

The primary role of hedge fund administrators is to perform a number of back-office functions for their hedge fund clients. Among the activities they perform are maintaining fund accounts and records, liaising with investors regarding subscriptions and redemptions, and communicating with prospective investors by, for example, sending out offering documents. However, by far the most important role that administrators typically perform relates to asset valuations.

It is difficult for a fund administrator to attract and retain top talent for valuation of complex OTC derivatives given the competition from hedge funds and the sell-side banks.

Given recent events and market pressures, the significance of a fund administrator's role in how it performs asset valuations and the degree of accuracy attained during the valuation process is more prominent than ever before. That being said, there is, however, a perception that many administrators often lack the necessary technical expertise and technology to value assets properly. Competition with Hedge Funds and sell-side banks makes it very difficult to attract and retain the necessary talent to perform the required valuations.

Current Sources for NAV Calculation

The main function of the hedge fund administrator is to calculate the Net Asset Value (“NAV”) of the fund and the NAV per Share of the fund. To do this, the administrator must use as much information as possible that it can source independently of the hedge fund manager – i.e. “prices should come from a recognized independent price source such as Bloomberg, Reuters or ValueLink, for example, or some other source able to provide an independent price” (Butler, 2008). This is relatively simple in the context of exchange traded securities, but problems arise with OTC transactions or other illiquid assets.

“Independent valuation has become a crucial piece of the derivatives puzzle as institutional investors seek portfolio transparency to meet internal risk and compliance goals.”

Judson Baker
Product Manager of Derivatives Processing
Northern Trust

For OTC derivatives, it is not uncommon for administrators to use prime brokers, hedge fund managers, or counterparty marks as a substitute and in lieu of independent valuations. According to the FSA (2005, p.49):

In respect of assets for which there are no easy or robust valuation methodologies and counterparty quotes are unavailable, administrators usually accept the hedge fund manager's own valuation. This can sometimes mean that a significant proportion of the fund's assets are not subject to independent valuation. Hedge fund managers generally perform their own internal valuations of all positions and seek to reconcile these with the administrators at the end of the month. It would appear that the hedge fund managers may wield significant ability to influence the administrators' "independent" valuations at this point in the process through their dialogue with administrator staff and the counterparties who are providing the quotes.

Hedge fund managers can often wield significant ability to influence the administrator in terms of valuation levels of exotic derivatives or illiquid securities.

With this in mind, “the degree exercised in relation to the valuation of complex and / or illiquid instruments is seriously compromised” (Deloitte Research Study, 2007, pp. 15-16). According to Simon Fludgate, Head of Operational Risk at Askia LLC, “valuation risk is the key risk that institutional investors consider when they evaluate a hedge fund”. Institutional Investors are rightly afraid of valuation risks, ranging from “the inability to accurately price positions to outright deception on behalf of the fund manager.”

Similarly, Harry McVea (2008), states that “asset valuations lie at the centre of the credibility of the hedge fund industry”. “Inaccurate or over-inflated asset valuations risk adversely affecting investors (and investor confidence) through incorrect redemption and subscription rates, and may also result in the payment of unjustified performance fees to hedge fund managers”.

“Service providers employ a number of skilled and experienced staff to build and operate their valuation models. Building up a resource base with the right skills (both technical and business) in the right market takes years.”

Sarah Jane Dennis
Consultant
INVESTIT

Moreover, in view of the emerging international regulatory consensus which emphasizes the monitoring skills of hedge fund counterparties in helping to moderate the risk-taking and general conduct of hedge funds, incorrect valuations are, as events in the recent subprime mortgage market debacle have shown, likely to result in a hedge fund’s total risk profile being mis-priced. Such mis-pricing increases the likelihood that costs will be borne by uncompensated third-parties (i.e. other indirectly connected financial institutions) and magnifies the possibility of a “financial stability event” occurring”.

When calculating pricing for illiquid and complex OTC derivatives, Administrators tend to do so through a combination of: counterparty quotes (when available), valuation models, and direct valuations from the hedge fund manager. Instruments that do not trade frequently and lack a public screen price are the most prone to valuation errors. The reason for this is that valuation of these instruments requires data that is difficult to source, and/or mathematical models that are difficult to build.

Valuation sources beyond broker quotes, portfolio managers, or counterparties should be used to gain a truly independent and transparent price view of complex OTC derivatives and illiquid securities.

NAV Valuation Options

With regulators and investors questioning the validity of broker, manager, or counterparty valuations as being independent and objective sources, fund administrators can no longer rely on these sources for prices. Instead they must find alternate valuation solutions that deliver greater transparency and an independent price view relative to the brokers, managers, or counterparties prices. A survey titled, "Transparency and Independence of Derivative Valuations: Current Practices, Trends, Challenges, and Recommendations", which was conducted by OTC Val, corroborates the trends in the market where 77% of the respondents suggested they would prefer an in-house solution or a third party valuation source as the primary source for derivative valuations. Among the options available to fund administrators are to build a solution, to buy a system, or to outsource the valuation component. All three have their advantages and disadvantages.

"As investment managers continue to invest in more esoteric structured products in search for returns for their investors and their investors are demanding more transparency and independence from the investment manager, fund administrators' knowledge, expertise, and judgment required to independently price portfolios go far beyond purchasing pricing data from independent vendors."

Henry Toy
Vice President
SS&C Fund Services

Build a Valuation Solution/System

Building a solution that can be integrated into existing systems is the most complex undertaking of the three. Accurately defining all the requirements for, let alone building an in-house solution can mean it is not a practical option for some firms. A typical engagement can include, but is not limited to, integrating an analytics library, which would act as the valuation engine, with numerous market data feeds and building a user interface that enables the user to price any instrument. While this seems straight forward, the intricacies and nuances of integrating multiple market data feeds with an analytics library can be a daunting task; a project that can take upwards of several years to implement.

When building or buying a valuation system, a fund administrator must be prepared to acquire and retain a team of specialist individuals, as well as be prepared for the technical challenges and significant fixed costs associated with such systems.

Building a solution of this magnitude requires significant human and financial resources to implement; thus is not always a feasible solution for many administrators. In instances where it could take a couple of years to implement a solution, valuation gaps may exist in the solution that could not be accounted for when the project was initiated; thus creating the need for a gap-fill solution to complement an expensive and long-term build solution. While maintaining control of the solution has its merits, the impracticalities of building, managing, and improving the solution do not warrant a build decision.

“An agreed and accurate source of valuations is fundamental to not only the NAV process, but also the derivatives collateral management process; it has the potential to speed up collateral calculations and dispute management which is essential to reduce counterparty exposure.”

Dr. Christopher Sier
Director
Alpha Financial Markets Consulting

Buy a Valuation System

When a buy decision is the favored option, fund administrators must consider a number of factors before selecting a solution. The most important consideration is finding a solution with derivatives coverage that fulfills an administrator’s current and future valuation requirements, where finding a solution that will meet future requirements will be difficult to assess as most fund administrators do not know what their future requirements are. As vendor product roadmap’s can change, the task becomes even more difficult. If purchasing a valuation system is favored, administrators should work closely with the preferred vendor to ensure their valuation requirements are considered in future releases.

Having said that, there are drawbacks to buying a valuation system and more importantly relying on the vendor to support future valuation requirements. It is not uncommon for a system implemented by an administrator to become antiquated or a vendor being unable to keep pace with an administrator’s valuation requirements. To overcome potential loss of business that can occur under the above scenario, an administrator can implement additional systems to round out its valuation requirements. While multiple systems can be viewed as a convenient work around, the complexities of managing trade and market data workflow in two systems and integrating price feeds from those systems to existing NAV processes can be an intimidating task. Also there’s the responsibility and overhead of obtaining and scrubbing all the data needed to feed into the models. And that’s not a small task or responsibility.

Outsourced valuation solutions allow for minimal disruptions to ongoing operations, little or no incremental IT spending, and access to a team of valuation experts.

Outsourcing to Third Party Valuation Vendors

More often than not, most systems implemented by fund administrators address vanilla valuations. In the event that administrators are able to find a solution that can address both their vanilla and complex derivative valuation needs, having the requisite technical expertise to price those instruments can be problematic. Add to this that hedge funds and asset managers continue to invest in complex derivatives as a means to enhance performance, fund administrators are faced with the challenge of keeping pace with the ever changing requirements posed upon them by their clients.

“In the post Credit Crunch environment, with investors, regulators and the media all focusing on the industry, the need for timely, accurate and independent pricing has become a sine qua non for hedge funds.”

Sean Sprackling
Partner

Investment Solutions Consultants LLP

Fund administrators can overcome the challenges of valuing derivatives by outsourcing the valuation of derivatives to third party valuation vendors. Since this option requires no upfront investment or ongoing maintenance of a system, it is a cost effective solution that has great appeal. Furthermore, outsourcing enables fund administrators to utilize multiple derivative valuation vendors with minimal disruption to their ongoing operations. By relying on derivative valuation professionals that have the technical expertise to value vanilla and complex derivatives, it enables fund administrators to focus on their core functions.

Some things to consider during the vendor selection process are to ensure the vendor has the breadth of coverage to meet your current and future valuation needs, proper price challenge support and transparency documentation is available, and the vendor has valuation professionals that have a thorough understanding of the nuances in pricing derivatives, including an understanding of the numerous derivative products, and the market data and valuation model requirements.

In evaluating any potential solution that provides valuation reports for exotic OTC derivatives or illiquid and hard-to-value securities, pay particular attention to the level and depth within that solution's transparency report.

Pricing OTC derivatives – Challenges and Considerations

Because most over-the-counter (OTC) derivatives and structured products do not have liquid markets, a mark-to-model approach to arrive at the price of these products is a widely used and accepted method, as long as transparent documentation surrounding models, methods, and market data accompany a valuation report.

Therefore, it is instructional to review the valuation challenges and the considerations necessary to overcome them. Insights are provided surrounding the:

1. Term sheet,
2. Associated risks [of the instrument],
3. Market data requirements,
4. Analytics requirements,
5. Necessary disclosures, and
6. Automating the process.

“Conflicts of interest arise when managers provide valuations of complex, illiquid instruments. Investors and regulators increasingly expect administrators to bring objectivity to the pricing process, to promote transparency, to arbitrate and resolve pricing disputes and to balance any undue influence of the manager.”

Darren Burrows
Managing Director
Funds-Axis

*Challenge 1: Understanding the **term sheet** or deal confirm*

Vanilla deals are fairly standard and easy to interpret. They can, however, contain certain nuances, such as whether rates are set in advance or in arrears, which sometimes escape the untrained eye. Term sheets for more exotic structures require careful analysis as they are largely custom structures with little standardized terminology or parameters. It is important to have the requisite expertise available to review the term sheets to ensure all aspects of the trade are taken into account during valuation.

Market data considerations beyond being able to source specifically required data include how “clean” the data is, and how relevant in terms of providing indicative quotes or executed prices / rates.

*Challenge 2: Understanding a derivative’s behavior in various market conditions and **associated risks***

Such understanding is paramount when selecting a mathematical model for valuation that contains the appropriate risk factors. An experienced market practitioner can ensure that the model used will take into account the appropriate data and risk factors. Stress testing and scenario analysis can then be conducted by varying inputs to the model to ascertain how sensitive a security’s fair value is to changes in specific market conditions.

*Challenge 3: Understanding, sourcing, gathering, managing, and applying the right **market data***

Conquering, or even taming, the market data animal is not an easy task, as the valuation of vanilla and exotic instruments normally requires large amounts of seemingly unrelated data. Sourcing such data is not always the issue, but finding clean, affordable, and easily decipherable data will often require economies of scale. Once this task is accomplished, then a market data management system must be purchased, or designed and implemented, on the appropriate scale for your pricing requirements. Be ready to evaluate data from leading data aggregators, inter-dealer brokers, and other vendors, on a number of levels, including whether they supply both bid and ask prices rather than just mid market quotes.

*Challenge 4: Understanding, sourcing, and applying the right **analytics** to the right instrument*

While industry standard analytics exist for the valuations of many derivative instruments, off-the-shelf software is rarely inexpensive, and rarely covers all of the instruments in your portfolio. Acquiring, using, or developing software to model various financial derivatives often requires a moderate to deep level of mathematical and/or programming expertise to successfully implement and automate. While spreadsheet solutions are normally “quick and easy”, they require maintenance and represent operational risks that must be addressed. If you purchase a large system, make sure its models, methods, and market data assumptions are well documented.

Automation is the key to minimizing operational risks posed by human interaction, and one of the most difficult challenges when addressing exotic OTC derivative or illiquid and hard-to-value security valuations.

*Challenge 5: Applying the right data to the right analytics, and providing appropriate **disclosures***

This step not only involves the correct combination of data and analytics, but also the correct documentation of the process. The incorrect combination of data and analytics could lead to materially inaccurate valuations. Applying the right data, in the right format, to the right inputs of the right analytics is a science with a sprinkle of art when it comes to tasks such as calibration and curve building, and an experienced quant or financial engineer can be essential here. A model is only as good as the data that drives it, and an incorrect valuation is often due to bad data usage or model result interpretation rather than inherent short-comings of a particular model. However, one must be very familiar with these short-comings and related assumptions, and include the appropriate disclosures, as outlined in paragraph 32 of Statement 157, for fair value measurements that occur on a recurring basis.

*Challenge 6: **Automation** of the valuation process for consistency and reduced operational risk*

Once the challenges listed above have been met, the process should be automated for portfolios of reasonable size. Even for a small portfolio of derivatives, automating, where possible, the valuation process will save time and reduce operational risk for long term efficiency and valuation consistency. Spreadsheet solutions are useful for prototyping and ad-hoc modeling, but should not be relied upon in a production environment due to operational risks. But ad-hoc spot checks of any automated process are recommended. There exist many large system vendors whose products perform derivative valuations and handle all of the behind-the-scenes activities to ensure consistency, accuracy, and some level of transparency and auditability. Of course, all solutions come at a cost, and every firm must decide what their appetite is for the tradeoffs between fees and functionality, software and service, in-house and outsourced, and complete solution versus gap filler.

Complying with best practices and thus staying ahead of forthcoming regulations can quickly become a key competitive advantage for proactive fund administrators and asset servicing firms.

Conclusion

Although hedge fund administrators clearly play a pivotal role in helping to ensure that hedge fund operations run smoothly, the spotlight has fallen on their role in relation to the valuation of hedge fund assets and, in particular, complex and/or illiquid instruments.

Hedge Fund Administrators are faced with a very complex and challenging landscape both now and in the future. The need to increase customer focus, reduce costs, attract new business, and provide accurate valuations are pivotal issues that will decide who wins and who loses in the Fund Administrator space. Moreover, as competition heats up, the majority of hedge funds have opted to unload the burden of maintaining a back office in order to free up resources to allocate to their core activities – trading and generating alpha. Additionally, increased fund complexity and shifting sources of capital have created an incentive environment that is highly conducive to the outsourcing trend (Celent, 2008).

Firms that will thrive in this new competitive environment will be those that pay particular attention to risk management and valuation so that can they attract institutional funds and so that they understand the risks they are taking and can make informed risk-return trade offs (Deloitte, 2007). Moreover, for investors, this means they need to carefully review valuation practices before investing—and continue to monitor those practices once an investment has been made. Hedge fund advisers that have not yet adopted some best practices need to evaluate if they should adopt these practices in order to continue to attract investors and satisfy regulators.

As discussed in this White Paper, the issue that is attracting the most attention by the media, regulators, industry bodies and investors are the means, methods, and actors involved in the pricing of hedge fund assets and securities. While many of the fund administrators, custodians, and asset servicing firms offer derivative valuations as part of their core services, they may not have the expertise or technology to provide valuations for illiquid and complex structured products. Thus they too are faced with a similar dilemma of expanding their technology or to partner with independent valuation vendors to address their clients' derivative valuation needs. Some of these organizations have taken an active role in improving valuation transparency, price challenge processes, and the associated risks of valuing derivatives through the use of multiple valuation sources. The buy-side firms and service providers who have been proactive in complying with regulations and establishing best practices have turned these initiatives into a competitive advantage.



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Derivatives Understood™

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About OTC Val

[OTC Valuations Limited](#) is a leading provider of transparent and auditable **valuation and risk reports** for vanilla and exotic derivative securities and structured products. OTC Val provides its clients *derivative valuation insights™* through independent valuations based on validated market data, carefully calibrated models, and proven valuation methodologies.

Are you:

- Experiencing **gaps in current processes** with derivative modeling and valuation challenges?
- Seeking **price verifications** and independent fair value insights?
- Having valuation **transparency** issues and require detailed documentation?
- Having **derivative modeling** challenges?
- Feeling **client, investor, internal risk control**, and **regulatory pressures**, including FAS 157 and IFRS 7?
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