Valuations Vendor Directory

A-TEAMGROUP

directory

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A-TEAMGROUP

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Foreword

WELCOME TO THE A-Team Valuations Vendors Directory. This is a completely new publication for our industry and we hope that it will become an indispensable aid to valuations professionals when assessing and selecting providers of services in the asset valuations market - whether pricing, other critical valuations data or models and analytics. Our aim is to make this and its associated events an annual feature.

But this is not just another list of firms with their telephone numbers – you can get that from Yell. Many leading players have chosen this publication to showcase their products and services with much more rounded company profiles. In addition, our 'Ask the Experts' section provides a forum for some of these firms to address the critical issues facing their companies, sectors and the industry as a whole. We are sure that these perspectives from the inside will prove interesting reading for anyone involved with asset valuations.

In addition to the vendor's information and views, A-Team has also added our independent commentary as to the current valuations vendor landscape and how this might be shaping up in the future. We first look specifically at recent developments in the pricing and evaluations markets, which has proved surprisingly dynamic in the last couple of years. We then review the models and analytics industry – a frequently neglected topic when looking at valuation options – and assess what major trends are developing here.

This Directory augments the A-Team Valuations Briefing service, which covers all the topics important to financial valuations such as accounting standards, regulatory changes and industry developments in the provider, servicer and advisor sectors.

It also encompasses our important annual Valuations User Survey, a true 'State of the Nation' review of how actual practitioners are going about their business. Watch out too for the upcoming conference schedule that will allow valuations professionals from all sides to meet face to face and will provide an important forum to discuss the key issues of the day.

In all, the A-Team Valuations Briefing provides all you need to know to keep up to date with developments in the asset valuations business. We hope you enjoy it.

Ian Blance
Editor
A-Team Valuations Briefing

valuation vendors

TRENDS IN THE VALUATIONS VENDOR INDUSTRY

UNTIL RECENTLY THE valuations part of the market data industry was seen as a backwater. Dominated by a small number of large players, there was very little change to report. The last few years, however, has seen the industry assume a much more dynamic character, with mergers and acquisitions, strategic alliances and additional investment in capability from existing players and new entrants.

This change has been driven by a number of factors including the evident economic attractiveness of the existing business (margins are estimated to approach 50% in some cases) and the emergence of new opportunities not being fulfilled by incumbents.

With increased interest from financial institutions responding to regulatory and compliance issues – a trend reinforced by the trauma of the credit crisis - the valuations business is currently enjoying an active period of development and the status quo is challenged on a number of fronts.

A-Team User Survey Results

In Summer 2008, A-Team Group conducted a ground-breaking survey of professional valuations users (see www.otc-valuations.com) the results of which highlighted a number of issues with valuations sources. There were three main findings with significant relevance for the future valuations landscape.

First, the more complex and esoteric the asset being valued, the less likely a firm was to use an independent evaluation source. In these cases an internal model or counterparty price was much more likely to be used.

Second, there was widespread dissatisfaction with the performance of the mainstream providers during the credit crisis in 2007. This was particularly evident, unsurprisingly, in the mortgage backed securities asset class, with complaints of large, unexplained price moves, pricing being dropped without warning and a general lack of transparency or justification for valuations which placed great strain on user processes.

Finally, the trend towards the use of multiple valuation sources wherever available was strongly evident.

New Vendors in Old Markets

One of the more intriguing recent developments has been the appearance of new providers of evaluations for relatively straightforward cash/vanilla instruments. In the last 12-18 months Bloomberg, Markit, Moodys and SIX Telekurs have developed or acquired cash bond evaluations services to challenge the existing players (Interactive Data, Standard & Poor's, Thomson Reuters). This reverses the recent trend for consolidation where the larger players hoovered up smaller operations to gain scale and market share. Whilst a multitude of sources can only be a good thing for the end user, it remains to be seen whether the market can economically support these new providers.

The Big Fish and the Small Fry

Perhaps a more predictable, but equally important, phenomenon is the emergence of niche players specialising in more complex and/or esoteric assets. This has been driven primarily by the sluggish response of the major vendors in providing valuations of these new products which opened the door for smaller, more nimble outfits, often with a level of quantitative expertise lacking in the larger players. The huge success story of this trend has been Markit – initially a provider of consensus CDS pricing, but now a major vendor in their own right. SuperDerivatives and SunGard Reech have also grown rapidly and there are a host of smaller firms providing specialist services.

Whilst the major vendors were slow to respond in developing their own valuations offerings here, they have been rather quicker to identify both the threats and the opportunities offered by their smaller competitors. This has manifested itself in a rash of partnerships and alliances between large and smaller players as each seek to exploit the others' virtues and strengths. The specialist expertise of the niche players expands the offering of the major firms, whilst the smaller shops benefit from sales footprint and distribution channels.

In the last few years Interactive Data has announced partnerships with Markit and Prism, Standard & Poors has hooked up with SuperDerivatives, Thomson Reuters with Lewtan and SIX Telekurs with ValuePrice. Should these alliances prove successful, are they likely to be consumated as full-blown acquisitions?

The Future of the Ratings Agencies?

The established ratings agencies have not exactly emerged from the recent economic woes smelling of roses. Investors, commentators and regulators alike have questioned both the quality of the ratings that were applied to many financial products in the first place – particularly sophisticated structured instruments which routinely acquired the Triple-A stamp of approval – and the responsiveness of the surveillance procedures once the proverbial had begun to hit the fan.

Add to this a collapse in new issuance that provides the bulk of ratings revenues and it is little wonder that the agencies have been looking for ways to profitably diversify. Valuations services are high on the list. The ratings agencies have many of the components for successful valuations and risk businesses – indeed, one can argue that a rating, correctly applied and regularly updated, acts as a proxy for a price. The three main players – Fitch, Moodys and Standard & Poor's – have active valuations strategies and we should expect more from these firms in the near future.

Exchanges Get in on the OTC Act

The explosion of OTC trading has not gone unnoticed by the traditional exchanges. After a burst of amalgamation and consolidation, the exchanges have now turned their attention to these markets that previously existed outside their purlieu.

There are three developments discernible. First, the exchanges see their networks and client bases as ripe for disseminating valuations even for those products that do not trade on their platforms and their customers currently have to source elsewhere. NYSE Euronext have developed their PrimeSource offering in this vein.

Second, even for OTC products there are typically indices, baskets and other generic products that lend themselves to exchange trading and expertise, component data and platforms are needed to be able to service these.

The CME acquisition of the CMA CDS service appears to be an example of this.

Finally, there is also a trend for more OTC assets to be traded on some kind of exchange platform. This was evident with the development of ECN technology for bond trading in the last 10 years, and platforms such as MTS and Tradeweb are now established features of the bond trading process.

It seems clear that the exchanges see the OTC area as a huge opportunity and want to be involved in some way. Their strategy is still evolving so we can surely expect more developments in the coming months.

Don't Forget the IDB's

Outside the sell-side trading community, the largest source of trades and quotes for the OTC markets has traditionally been the Interdealer Brokers. The major IDB's have long had information departments dedicated to monetizing the data generated as a by-product of their core broking business. This data – particularly liquid trades and underlying assumptions such as volatilities – are key inputs to the valuation process and is used by all the major valuations providers.

Historically, the IDB's tended to take an agnostic approach to the data business, selling their feeds to pretty much anyone who wanted them. There is some evidence, though, that this approach is changing. Having watched firms take their data and transform it into premium priced valuations, there is a sense that the IDB's would like a piece of that pie. How they go about it, without killing existing revenue streams, is going to be interesting.

Watch This Space

So, a boring provincial backwater has suddenly got active and interesting, trendy even – like Slough turning into Shoreditch! With more acquisitions, alliances and new product developments on the near horizon, the valuations business will be worth watching in the years to come.

Fitch Solutions

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Fitch Solutions, a division of the Fitch Group, focuses on the development of fixed income products and services, bringing to market a wide range of data, analytical tools and related services. The division is also the distribution channel for Fitch Ratings content. Offerings include pricing and valuation services, ratings research, risk and performance analytics, structured finance workflow solutions, and advisory services. The Fitch Group also includes Fitch Ratings and Algorithmics and is a majority-owned subsidiary of Fimalac, SA.

As a result of regulatory changes and volatility in the capital markets, financial institutions are increasingly being asked to provide more transparency into how valuations originate as well as fair and objective market-based valuations of their assets. To help financial institutions meet these demands, Fitch Solutions offers a variety of pricing, valuation and advisory services for a range of structured products.

Fitch Solutions valuation services include:

• Fitch Pricing Services - Premium quality CDS pricing data based on data sourced from Tier 1 banks and subjected to a stringent cleaning process. Coverage includes:
- CDS Pricing: daily consensus pricing on nearly 3,000 reference entities covering corporate, sovereign and loan CDS.
- CDS Liquidity Scores: A newly introduced measure which identifies the relative liquidity of each asset and its percentile ranking across the CDS universe allowing risk managers to compare the relative liquidity of assets across regions, sectors and rating bands as well providing information on the liquidity of an asset and the broader CDS market over time.
- ABCDS Pricing: monthly consensus pricing on 2,500 asset backed credit default swaps including RMBS, CMBS, and CDOs.
- CDS Benchmarking: derived pricing for 5,000 illiquid credits and assets.

• Fitch Valuation Services - A daily pricing and risk analysis service designed to meet investors' needs for a dynamic, objective and comprehensive market risk reporting facility for synthetic CDOs, thus alleviating the cost and complexity of building and maintaining an in-house solution.

• Fair Valuation and Risk Analysis Services – A tailored consulting service designed to help clients fully understand their risks by analysing cashflow characteristics and the composition of deals to provide accurate and objective market-based pricing as well as to assess the potential risks of structured finance instruments and portfolios.

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ICAP is the world's premier voice and electronic interdealer broker, with average daily transaction volume in excess of US $2.3 trillion, more than 40% of which is electronic.

ICAP's Market Information division (IIS) is the world's leading source of original and authoritative over the counter (OTC) prices across a wide range of global and regional asset classes, instruments and time zones.

ICAP's market data solutions include recognised benchmark products that satisfy real-time, end-of-day and historical data requirements, as well as research and commentary from some of the world's leading economists and analysts.

Coverage includes:

- Foreign Exchange
- Money Markets
- Interest Rate Derivatives
- Fixed Income
- Credit Markets
- Energy

Applications for ICAP data include:

- Programmatic and/or automated trading
- Instrument pricing
- Market and/or credit risk evaluation and management
- Portfolio valuation and management
- Price discovery
- Intra-day and end-of-day evaluations

ICAP market data is available real-time through a range of data distributors. Snapshot or end-of-day delivery is available direct from ICAP or selected vendors. A comprehensive range of historical data is also available, including tick data from ICAP's award-winning electronic spot FX and US Treasury trading platforms, EBS and BrokerTec.

To find out more about how ICAP's range of market information, commentary and research solutions can help your business, visit: www.icap.com/marketdata

Interactive Data

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Interactive Data Corporation (NYSE: IDC) is a leading global provider of financial market data, analytics and related services to financial institutions, active traders and individual investors. The Company's businesses supply real-time market data, time-sensitive pricing, evaluations and reference data for millions of securities traded around the world, including hard-to-value instruments. Many of the world's best-known financial service and software companies subscribe to the Company's services in support of their trading, analysis, portfolio management and valuation activities. Through its businesses, Interactive Data Pricing and Reference Data, Interactive Data Real-Time Services, Interactive Data Fixed Income Analytics and eSignal, the Company has approximately 2,300 employees in offices located throughout North America, Europe, Asia and Australia, and is headquartered in Bedford, Mass.

Interactive Data Pricing and Reference Data collects, edits, maintains and delivers data on more than 6 million securities, including daily evaluations for approximately 2.5 million fixed income and international equity issues, and provides independent valuations for a broad range of alternative investments, including single name credit default swaps (CDS), CDS index trades, interest rate swaps and bank loan prices.

In addition, Interactive Data's Pricing and Reference Data business now provides valuations of highly complex OTC derivatives and structured products through an exclusive agreement with Prism Valuation.

Services include:

- Evaluations of global fixed income instruments including corporates, high yields, governments and agencies, securitised debt issues such as ABS, CMBS and CMOs, US municipal securities, hybrid securities and money market securities
- Fair Value Information Services for international equities, options and index futures
- CDS valuations*
- Interest rate swap valuations
- Bank loan valuations*
- Intra-day indicative valuations for equity and fixed income ETFs and ETNs
- Risk analytics data from Interactive Data's Fixed Income Analytics business

Pricing, evaluations and reference data are provided in the US through Interactive Data Pricing and Reference Data, Inc. and internationally through Interactive Data (Europe) Ltd. and Interactive Data (Australia) Pty Ltd.

**CDS and bank loan valuations provided by Markit Group Limited*

Independent Valuations Structured Finance & Credit Derivatives

Truly Independent

Julius Finance is a private company not owned by any bank, fund, or ratings agency. We offer truly independent, market-consistent valuations to help managers, investors, and regulators navigate through the current credit market no matter how complex and intimidating the valuation problem may appear to be.

Extensive Coverage

- Synthetic and bespoke CDO and CDO2
- Trust Preferred CDOs
- Credit Default Swaps
- Constant Proportion Debt Obligations (CPDOs)
- Constant Proportion Portfolio Insurance (CPPIs)
- Counterparty Risk Solutions
- Residential and Commercial MBS
- Asset-backed CDOs
- Bespoke Multi-asset Structures

Services

- Independent Valuation
- Litigation/Mediation Support
- Portfolio Support
- Credit Risk Advisory
- Hosted Risk Reporting
- Scenario Analysis
- Structuring & Restructuring
- Compliance Support
- Relative Value Trading
- Bespoke Projects

Verifiable, Auditable Valuations

Julius Finance's focus on structured finance and credit derivatives has allowed us to spend the requisite time and energy to build high-quality and accurate valuations. We leverage years of research, combined with robust, reliable delivery mechanisms which are currently providing clients with tranche data. To date, globally Julius is the only analytics provider delivering valuations based on Monte Carlo scenarios consistent with all liquid tranche prices - rather than ad-hoc rules.

Technology Infrastructure

Whether it is for daily, weekly, or monthly valuations, Julius Finance works closely with clients to understand their requirements. Julius Finance offers its clients a single point of contact and handles all data integration, model calibration, cash-flow computation and reporting.

Julius Finance solutions can be provided in an on-going basis in a Software-as-a-Service model meaning there is no costly software to install, maintain, or integrate. We own and access significant computing resources, including a supercomputer cluster. Regular model calibration is performed, producing market-implied default scenarios updated in sync with real-time market data.

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Julius Finance Corporation is a private research company bringing new solutions to the structured finance markets.

Julius Finance has developed the first arbitrage-free valuation for synthetic CDOs. We provide internally consistent valuations, forward looking scenarios and hedging analysis for synthetic and bespoke CDOs, CDO^2, CDO^3, CPDOs, CPPIs, and portfolios of CDSs. In addition, we also have extensive coverage of ABS/MBS securities and provide drill-down cash flow analysis for Sub-prime, Alt-A, Jumbo and others.

Julius Finance are experts in analyzing, valuing and developing strategies for exotic OTC structured finance products. Started by one of the world's top experts in credit modeling, Julius Finance is highly regarded for the quality and accuracy of its valuations. Julius' valuations allow investors and regulators to better understand and manage their risk in today's turbulent markets.

Julius Finance is an analytics provider that focuses solely on structured finance. We are a specialist pricing provider for hard to value assets – not a bulk vendor of vanilla valuations. Julius Finance is the choice for unique, in-depth, specialized and dedicated expertise.

At a time when clients are concerned about conflicts of interest, Julius Finance offers clients true independence. Julius Finance is a private company and is not owned by any bank, fund, or ratings agency. We offer the only truly independent, market-consistent valuations to help managers, investors and regulators navigate through the current credit market.

Julius Finance offers clients flexibility and customization. Clients are engaged on a project-by-project basis, taking the time to understand clients' specific valuation and reporting needs. In addition, clients are able to take advantage of supplemental data such as risk statistics, scenario analysis and stress testing results built around their specific goals.

markit™

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Markit is a financial information services company headquartered in London. The company has offices in Europe, North America and Asia-Pacific and employs over 1,000 staff.

Markit was founded in 2001 as the first independent source of credit derivative pricing. The company now offers a wide range of data, valuation, portfolio management and trade processing services spanning all over-the-counter (OTC) asset classes. Our clients include buy-side and sell-side institutions as well as regulators and central banks.

Our products and services enable our clients to manage risk, improve operational efficiency and meet regulatory requirements, many of which are now regarded as the market standard in their field. In 2008, Markit won fifteen industry awards for services to the global financial markets, including Best Buy-Side Valuations Service (Buy-Side Technology Magazine, November 2008) and Best Data Provider (Financial News Excellence in IT Awards, September 2008).

The importance of reliable and independent pricing and valuations services has never been greater. Our Markit Portfolio Valuations service, designed specifically for the buy-side, provides an independent post-trade calculation of the gross asset value of a portfolio of trades. Markit Portfolio Valuations covers the broad range of OTC derivative instruments and spans all asset classes including credit, equity, currency, interest rates and commodities. Our valuation methodology takes full advantage of our access to unique pricing data. We use this comprehensive data set together with market-standard models to generate independent valuations which can be used to establish client fund NAVs.

In 2009, Markit will launch the first global, multi-bank, cross-asset client valuations platform. Markit Valuations Manager will bring considerable operational efficiency and transparency to a buy-side firm's valuation process by offering electronic delivery of dealer OTC derivative and consensus cash valuations, alongside Markit's own independent valuations, on a single platform.

To learn more about Markit and our services please visit www.markit.com

Moody's Analytics

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Moody's CreditValues provides the fixed income market with real-time price discovery, same day pricing, portfolio valuations, intra-day market prices and relative value analysis.

Moody's CreditValues broad coverage includes:
- Municipal, Corporate, and Convertible Bonds
- CDS
- Indexes
- Tranches
- CDO (including TruPS)/CLOs
- ABS
- MBS
- Loans and more.

Real-Time Price Discovery & Relative Value Analysis

Moody's Credit Quotes® Live accurately parses traders' emails for indicative quotes and presents the retrieved pricing information in a comprehensive, clear, and intuitive interface.

Traders, Portfolio Managers, and Credit Analysts can use the integrated Moody's fundamental and market-based credit risk metrics to analyze for relative value, monitor risk exposure and execute on trading opportunities.

Pricing and Portfolio Valuations

Moody's Analytics provides observed, evaluated and modeled pricing that can be used for mark-to-market and portfolio valuations. Clients have direct access to our expert evaluations team.

Moody's DCV service for Structured Finance leverages Moody's Research and Analytics models, financial engineering tools from Moody's Wall Street Analytics and Moody's extensive structured finance monitoring databases and "waterfall" libraries to deliver an independent determination of the Discounted Cashflow Value of CDO securities.

Intraday and Same Day Market Data

Clients can receive 5 or more intraday snapshots and same day data collected directly from the market as markets are being made. Clients use our market data throughout their organization to evaluate trades, support trading strategies, back- and middle office functions, risk management, audit support, price verification, research and other functions.

Moody's Analytics

Moody's Analytics is the credit analytics and economic insight arm of Moody's Corporation. We serve clients in more than 80 countries, including most of the world's 100 largest financial institutions. Our integrity and deep market expertise have earned us the trust of capital market participants worldwide.

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Founded by professionals of the trading floor, Pricing Partners provides software solutions and consulting services for derivatives independent valuations which integrate the latest quantitative developments on modelling. The quantitative research is headed by Eric Benhamou, a well known expert, formerly head of quantitative research in a large investment bank (Goldman Sachs, IXIS).

Price-it Online, the SAAS solution developed by Pricing Partners has a large asset class coverage including: Interest Rate, Equity, FX, Credit, Inflation, Commodity, Life Insurance and Hybrids. It has been designed upon the in-house financial library Price-it and is feed with high quality market data.

The Pricing Partners financial library uses cutting edge pricing models and techniques, similar to the ones used by investment banks. It is based on an innovative technology of generic description of financial products cash flows, with an intuitive language.

The architecture allows changing seamlessly a mathematical model, a numerical method or the parameters of a calibration. This flexibility offers the opportunity for the user to value complex OTC financials products, while varying easily the different assumptions of the valuation in total transparency.

To keep the development at the fore front of the quant side, Pricing Partners has also tied partnerships with leading actors in financial modelling:

- Supervision of Quants developments by a scientific committee headed by Nicole El Karoui and Bernard Lapeyre, top academics in financial mathematics.
- Collaboration with NYSE Euronext, Lunalogic, and four top French universities, to create the Credinext consortium that aims to develop new generation pricing models for structured products in illiquid markets.

Price-it Online is the unique solution 100% developed in-house by quantitative experts and natively dedicated to independent valuation.

By outsourcing their valuations to Pricing Partners, our customers benefit from process know-how, independence and strong quantitative expertise regarding the OTC products.

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Prime Source is the first, truly independent valuation agent operating on a global scale. As part of the NYSE Euronext group, we offer the dependability, resiliency and technological backbone you can expect from few valuation service providers. We offer customers the strategic commitment to valuation; a partner that customers can rely upon for the long term.

Customers are offered a complete range of valuation services across wide product and asset classes using one point of access. This enables you to manage operational risk and increase valuation process efficiency or ensure compliance with regulatory and accounting duties by offering a full audit trail.

All you need to do now is choose from one of our services whether you have contributed, market or modelled prices, we can meet your valuation needs across a wide product range. These include: bonds and credit instruments, money market instruments, credit derivatives, equity derivatives, interest rate derivatives, FX derivatives, structured credit assets and other hybrid structures.

Our contributed prices platform enables customers to search from multiple quote providers. This includes the closing price of debt and derivative instruments traded on one of the many NYSE Euronext regulated markets and multilateral trading facilities, aggregated prices from one of the many debt and derivatives market makers who have partnered with Prime Source and other contributors such as rating agencies.

For non-contributed prices, Prime Source offers customers the valuation of OTC derivative positions, posted on a secure server using recognised models and market prices from a variety of data sources.

Along with all of this, we offer the flexibility and scalability that will suit your needs. From bespoke one-off to the valuation of a full portfolio of multiple instruments, Prime Source can provide daily, weekly, monthly or ad-hoc valuations.

From valuing vanilla bonds to complex and illiquid instruments Prime Source can provide the valuation service you need.

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Prism Valuation was founded in 2006 to provide independent valuation and risk management services for customers' OTC derivative and structured product deals covering all major asset classes: Interest Rates, Inflation, FX Equities, Commodities, Funds and Credit.

Our emphasis is on thinly-traded and hard-to-value assets, but we also value the full spectrum of deal types from the vanilla to the esoteric.

Prism Valuation has a team of senior people, each with many years direct and extensive experience on the trading floors of leading international structured products dealers. This core knowledge base is supported by a team of high-calibre associates, each highly skilled in financial engineering and computer modelling.

Our strategy in providing services is to replicate the pricing and risk analysis capabilities of a structured products dealer. In this spirit, we operate a bottom-up approach, in which the valuation quant teams independently analyze original deal documentation (deal termsheet, confirm or prospectus) and then decide on the required market data, appropriate models and relevant calibration strategies most suitable for valuing a given deal. A key feature of our service is our innovative Valuation Transparency Report, in which the valuation process of even the most complex structures are illuminated in plain language

Prism Valuation is not affiliated with any structured products dealers and is therefore able to offer truly independent analysis. We collect all of our market data exclusively from brokers and other independent data vendors. In addition, we have all the financial tools accessible to a structured products dealer, hence we are able to value any transaction where underlying data is available. This extends to the most exotic deals and one-off structures that are found in the structured products market.

Clear-cut transparency.

In a multi-faceted market, our Fair Value Pricing Service offers transparent valuations for your fixed income securities. SIX Telekurs understands that you need to base your analyses on figures which are uniform and transparent.

Our Fair Value Pricing Service applies a systematic, engine-driven calculation method. Therefore, we can provide you with fair value prices, undistorted by market rumour or sentiment.

You can look up and monitor every step of each calculation to understand exactly how we got there. We offer valuations of over 61,000 bonds and 28,000 floating rate notes in eleven different currencies, four times a day.

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As a leader in its field, SIX Telekurs specialises in the procurement, processing and distribution of international financial information. The financial market specialists at SIX Telekurs gather information from all the world's major trading venues and contributors – directly and in real time. The SIX Telekurs database with its structured and encoded securities administration data on over 5 million financial instruments is unique in terms of its depth and coverage. With offices in 23 countries worldwide, SIX Telekurs combines the advantages of global presence and local know-how.

SIX Telekurs retrieves valuation price data from stock exchanges from all around the globe six times a day. This process is based on a unified system across all exchanges, guaranteeing that all valuations are gathered and processed in the exact same manner, regardless of location. This ability to track sources offers maximum transparency, and is also paramount for the audit trail.

The system runs are timed as closely as possible to the various Asian, American, and European stock exchange closing times, to ensure global and up-to-data coverage. Thanks to the unique and encoded structure of VDF, when the valuation prices are received (eg trade, bid, ask, closing price, *etc*), they are converted into the VDF format based on statistic types (STT), value types (VAT) and value styles (VS). This enables SIX Telekurs to deliver detailed data in a clearly structured and easy-to-use form.

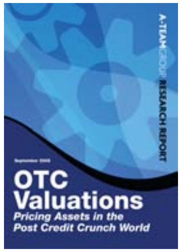
SIX Telekurs also offers a Fair Value Pricing Service, which provides its customers with consistent and transparent valuation for fixed income securities. The service differentiates itself in the marketplace from other price calculation services by the degree of transparency it provides around its methodology – enabling independent validation – and by the frequency of price delivery – four times a day. The service covers the prices of about 90,000 instruments, in eleven different currencies.

Further information is available at
www.six-telekurs.com

OTC Valuations

Pricing Assets in the Post Credit Crunch World

A-TEAMGROUP RESEARCH REPORT



The issue of mis-pricing assets has hit the mainstream. Identified as a contributing factor in the current financial crisis, addressing the need for accurate and timely valuations is now high on the agenda for many institutions and regulators alike.

Find out how the changing regulatory landscape is likely to impact your business, and how you can best tackle the challenge of valuations, with A-Team Group's in-depth research report *OTC Valuations: Pricing Assets in the Post Credit Crunch World*.

- Learn about different approaches to valuations and their pros and cons
- Understand which regulations and accounting initiatives will impact on your current approach to valuations, and why
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models providers

TRENDS IN THE VALUATIONS MODELS AND ANALYTICS INDUSTRY

MUCH COMMENTARY AND review of the valuations business focuses on the provision of valuations by vendors – either their own opinions of asset values or the collation and/or aggregation and distribution of other price sources. This neglects a very important piece of the pie, namely the internal generation of valuations by the investors themselves (or those who service them).

One of the notable findings of the A-Team Valuations User Survey conducted in the second half of 2008 (see www.otc-valuations.com) was that the more complex the asset, the less likely that an external or independent source would be used for valuations. Indeed, for the most esoteric assets, internal models were frequently the only valuation option available. This may seem almost counter-intuitive, but for highly complex and illiquid securities the investor may be the only market participant with access the the term structure, data inputs and assumptions required to value the specific deal.

Even with all this information, an appropriate model or analytic library is still required in which to set the deal up, calibrate and then provide all the inputs and updates to allow an ongoing revaluation capability. We at A-Team therefore believe that coverage of the range of models and analytics vendors that provide pricing libraries and other key components for internal valuations is essential to the understanding of the valuations business as a whole.

Internal Valuations are Allowed

Just for the avoidance of any doubt, the legal and accounting regulations and guidelines that govern asset pricing do not forbid internal valuations. Provided that this is done in a fair and transparent manner and in a process that avoids conflict of interest, internal valuations are allowed. For instance, the recent FAS 157 US accounting regulation covers this topic and outlines the transparency of inputs used to arrive at a value as a key point – not who does the valuation in the first place. In addition, the UCITS III regulations instituted by the European Union expressly allows for internal valuations provided they are conducted by an internal group not influenced by those to whom investment performance determines remuneration.

It follows the organisation of such internal valuation operations, and the tools and data that they use, is of explicit importance to any analysis of the valuations industry.

Evolving Best Practice?

Rather than simply being tolerated by the regulators, there is some evidence to suggest that in the near future internal valuation capability may actually be encouraged or even mandated.

Historically, it has typically been sufficient to meet the various regulatory strictures on valuations by using two different pricing sources – say a counterparty price and an independent vendor – and comparing the two. By using two external sources (such as in this example), there is no obvious evidence that the investor has an opinion on the value of the asset, or for that matter, that they actually know and understand the asset in question. The debacle in the Structured Finance market over the past 18 months or so has convinced many commentators – including ourselves – that many banks and investing institutions were not fully cognisant of the structure of the assets that they were holding, or the true risks that they faced.

Furthermore, we know that this view is gaining credence with the regulators (particularly now that many of them are full or co-owners of these assets) and we are expecting that regulatory change in the coming months will include measures requiring holders of complex financial assets to show that they understand what they hold and the concomitant risks. This will likely require investors not just to know how to value the deals they invest in, but to be able to show it. Using external sources will no longer be enough.

As a consequence, valuations best practice is likely to evolve from the use of two external sources to the comparison of one, possibly even two, external sources to one's own internal opinion. It is not difficult to see a triumvarate of internal/counterparty/ independent prices as the ideal solution for many firms wherever possible. The implication of this is that, where internal valuation capability does not exist, it must be created, and that where it does exist it will likely require beefing up. To possess a viable internal valuations operation one requires qualified people, appropriate models and the necessary market data inputs – much the same as an independent valuation shop – and many smaller firms, without internal resource to develop their own, will likely turn to commercial providers for what they need.

Commercial Libraries and Analytics

A-Team questioned valuations professionals on the use of models in our 2008 Survey (see above) and the results revealed a general lack of penetration of commercial valuation models in the user community. Most were still reliant on their own quants and spreadsheets. These results may have been skewed somewhat by our focus on the larger financial beasts in the jungle. Intuitively one might assume that the smaller firms have less resources at their disposal to devote to this and therefore are more attracted to off-the-shelf solutions. We intend to explore this further in our 2009 Survey.

In addition to use by investors' internal valuation operations, these commercial models and analytics are also deployed by the independent valuations vendors. Scratch beneath the surface of the operations of a pricing provider – particularly the smaller, more specialist firms – and you will frequently find one of the main commercial model suites such as Numerix or FINCAD as part of the system infrastructure. If not exactly secret, this is not typically broadcast to the user community for reasons we don't fully comprehend but intend to find out.

Cashflow Models and Structured Finance

There is a niche area of the valuations data and analytics industry worthy of special mention given the events of the past couple of years – cashflow data for Structured Finance. In assessing the value of a security backed by some kind of loan collateral such as mortgages, leases, credit card receivables *etc*, the determination of the correct cashflows to discount depends crucially on the assumptions used to forecast the pre-payments of the collateral. The speed at which the collateral is assumed to be paid, or if any of the collateral is unlikely to be paid at all (*ie* it defaults), have a huge impact on the present value of the security which it backs. This gets all the more complex when the rights to specific cashflows are packaged up into different pieces, or tranches, of a deal such as in typical CDO structures.

Clearly in such a situation, having access to the actual, past payment behaviour and an ability to monitor and forecast future pre-payment speeds and default probabilities is absolutely vital to the correct valuation of the asset. Providing this information is a very specialist business and there are only a handful of players occupying this market niche.

Historically the use of this data has been confined to the major banks and asset managers who run their own trading and valuation models, and the large pricing vendors who require this information as inputs to their valuation systems. Indeed, it is these large vendors who have set up or acquired some of the cashflow providers, and those that don't currently own one would no doubt like to. Looking to the future, however, the same trend is likely to apply here as in the model library sector. More firms are going to have to build their own valuation capability and they will need this critical data to run them.

Watch This Space Too!

So, in the same sense that the valuation providers space is looking like an active and intriguing area over the near future, so too are the prospects for models and analytics, albeit for slightly different reasons. With the likelihood that more investment firms are going to be looking for models and specialist data to power their internal valuation capabilities, the prospects for this sector look good.

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Numerix is the leading analytics institution providing cross-asset solutions for structuring, pre-trade price discovery, trade capture, valuation and portfolio management for derivatives and structured products. More than 375 financial institutions and 45 partner systems across 25 countries rely on Numerix analytics for speed and accuracy in valuing and managing their structured products and derivatives.

Since its inception in 1996, Numerix has become the widely regarded market standard for pricing, valuation and managing the most sophisticated financial instruments. With primary offices in New York, London, Tokyo, Hong Kong, Singapore and Dubai, Numerix brings together unparalleled expertise across all asset classes and engineering disciplines. Our business professionals intimately understand the OTC markets, and our research and development teams, comprised of over 60 PhDs with expertise in theoretical physics, computer science and applied mathematics, respond rapidly to the changing landscape of these vital markets.

Numerix is the only analytics company to support derivatives and structure products across all major asset classes including Credit, Equity, Fixed Income, Cross-Currency, Foreign Exchange, Inflation, Commodities and Hybrids. Delivered on an integrated framework with all the fundamental building blocks to create and build unlimited structures, the sophisticated layered architecture allows for the construction and valuation of the most complex exotic deals.

Numerix alliances are critical to our successful implementation of pricing and risk solutions for our mutual clients. The flexibility of our analytic infrastructure enables most of the world's largest STP systems to offer Numerix analytics embedded, or "out of the box". Bloomberg, Misys, Thomson Reuters, Calypso, and Wall Street Systems are a few of the strategic partners currently offering embedded Numerix analytics.

Numerix leverages this partner ecosystem to deliver its "enterprise" valuation services. To meet an organization's challenges, Numerix Valuation Consultants analyze client requirements and bring together the systems, the best-of-breed data, expert valuation partners and the global Numerix Professional Services team to meet the valuation demands of the most sophisticated financial institutions.

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Fitch Solutions focuses on the development of fixed-income products and services. Fitch Solutions and Portsmouth Financial Systems have partnered to provide the Fitch Cashflow Analytics Platform –a modeling platform that brings a new level of transparency and analytical efficiency to the structured finance market. Fitch Deal View, the first product available on the platform, is designed to provide increased insight into the performance and valuation of structured bonds. The platform also offers loan-level collateral and performance data, legible bond models, default and prepayment modeling, and advanced scenario analysis for mortgage-backed securities. For more information, visit www.fitchsolutions.com

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Markit is a financial information services company with more than 1,000 employees in Europe, North America and Asia Pacific. Over 1,000 financial institutions use our independent services to manage risk, improve operational efficiency and meet regulatory requirements.

As a leading presence in the North American and European Structured Finance Industry, Markit has successfully developed a series of integrated products to address the needs of market participants. Services include the provision of independent cash and synthetic bond pricing, bond and loan level surveillance data, cashflow models, and ongoing trade settlement information for CDS of ABS trades. Markit also owns and manages the ABX.HE and CMBX indices in North America.

For more information, see www.markit.com

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Standard & Poor's ABSXchange is an Internet-based application that provides portfolio monitoring, cash flow analysis and detailed reporting for the European RMBS, ABS, CDO and CMBS market.

This service offers users:

- A single solution for portfolio surveillance, valuations and cash flow analysis;
- Deal-specific RMBS, ABS, CDO and CMBS cash flow models that include rated and non-rated tranches, triggers and credit enhancements;
- The ability to edit CMBS assumptions at the collateral loan level for defaults, prepayments and losses; and
- Broad market coverage of over 2,400 transactions including both S&P-rated and non S&P-rated deals.

ABSXchange continues to expand its database as it adds additional asset classes in Europe, Asia, Australia and the U.S. ABSXchange reflects Standard & Poor's commitment to transparency and to providing financial intelligence to market professionals around the world.

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Trepp, LLC is the nation's leading source of risk assessment tools, information, analytics and technology about commercial real estate lending and finance. Utilizing the largest proprietary database of commercial real estate loans – over 100,000 distinct loans valued at more than $1 trillion – and sophisticated, comprehensive models, Trepp offers access to the most in-depth information for monitoring, pricing and analyzing commercial real estate loans. Trepp's tools are delivered through the web and Bloomberg systems, and are utilized by over 500 institutional clients representing insurance companies, (investment) banks, pension funds, asset managers and regulators.

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ask the experts

ASK THE EXPERTS

AS STATED IN our introduction, a number of the leading providers of valuations, models and analytics have chosen to use this Directory as a showcase for some of their most recent developments.

This 'Ask the Experts' section includes a series of pertinent and hopefully thought provoking, articles from these firms on a variety of topics relevant to the industry.

This kind of medium further differentiates our Directory offering from the usual listings of firms. We have asked the contributors in this section to focus on issues of direct relevance and interest to valuations professionals, be they methodological debates, process and operational problems or new product developments.

In providing a forum for experts in their field to update the industry on their latest thinking and initiatives, in additon to the listings and independent editorial commentary, we hope to make the A-Team Valuations Vendor Directory an indispensible annual guidebook to the stat of play in the valuations vendor world.

First, Magnus Cattan from **Interactive Data** outlines their new pricing service (produced in association with **Prism Valuation**) covering complex OTC derivatives and structured products augmenting their significant existing evaluation coverage. Of particular note are the Valuation Transparency and Discrepancy reports which provide a large amount of background information to the derived value.

From **Julius Finance**, Peter Cotton highlights what he believes is a flaw in many current methods to model defaults due to the 'correlation myth'. He explains the concept of Model Fusion, used by Julius and others to correct this flaw, and how this concept can be particularly useful in a number of financial applications, but particularly in valuation of complex products such as CDO2.

David Fiske from **Lewtan Technologies** describes how the deal libraries and credit performance data in their ABSNet product can be employed to determine fair values for structured finance assets. In addition to valuations, the product's functionality can also assist with credit analysis, risk management and compliance reporting.

In the article by **Prism Valuation**, Dr Greg Cripps looks at the challenges of valuing complex structured products. He describes the Prism 'bottom up' valuation approach and how this is deployed in their 'People-Data-Models' structure to price complex deals.

Peter Jones, head of the new Valuation Scenario Services division at **Standard & Poors**, gives an illustration of their new service offering. Using an example of UK RMBS he shows how valuations vary enormously depending on the various assumptions that apply in different scenario's.

Finally, Stephen Choate of **ValueLink** looks at counterparty price collection and its current manually intensive operations. He explains how the ValueLink ADEPT system can streamline this process and help to control operational risk.

All of these vendors also have major entries in the main Directory section that explain their services in much more detail.

Valuations of complex OTC derivatives and structured products

by Magnus Cattan, manager, Fixed Income and Derivatives, Interactive Data (Europe)

INDEPENDENT VALUATIONS OF complex OTC derivatives and structured products, as well as evaluations of fixed income securities, are seeing increased demand as a result of a combination of new regulations, market volatility and the credit crunch. Financial institutions have been working to ensure that they have a firm grasp on the value of their holdings. Assessing risk exposure is a key focus.

At the same time, the growth of alternative investment funds and the opportunity for asset managers to invest in derivatives under UCITS III has led to exponential growth not only in volume traded, but also in the levels of complexity.

Transparency and standards are fundamental to the valuation process. Investors and regulators expect consistent, transparent and fair pricing across all alternative investment classes.

In response to this industry challenge, Interactive Data's Pricing and Reference Data business now provides valuations of highly complex OTC derivatives and structured products as part of its wide-ranging pricing and evaluation services through an exclusive agreement with Prism Valuation. Prism Valuation – whose philosophy to valuation is built on three pillars 'people-data-models' – provides services that replicate the pricing and risk analysis capabilities of a structured products dealer, with an emphasis on hard-to-value assets.

The structured products valuation service, available via Interactive Data's FTS℠ portfolio administration service, can provide valuations on a daily, weekly, monthly or quarterly basis. In all cases, a full service is provided with a user friendly FTS front-end that enables clients to submit deal confirms or other source documents directly, rather than having to input the structure and select and calibrate models.

Valuation Transparency Report

A key feature of the service is an innovative Valuation Transparency Report, in which the valuation process for even the most complex structures is illuminated in plain language. This includes the choice of: underlying market data, appropriate model selection and calibration strategies culminating in a valuation.

Coverage

The service is capable of providing valuations for most flavours of OTC derivatives and complex securities, and new structures are continually being added. The following is a small sample of the types of products currently covered:

Interest rates
Bermudan swaptions, Callable Zeroes,
Callable Range Accruals (single index, CMS spread...),
Callable CMS Spread Options, Callable Basis Swaps,
Digital Caps / Digital Swaptions / Target Redemption Notes (TARNs),
Snowball / Snowbear / Snowblade (callable path dependents),
Quantos, including callable quantoed structures, Hybrids.

Inflation
Swaps, Hybrids,
Caps / Floors / Swaptions.

FX
Power Reverse Dual Callable, Power Reverse Dual Triggerable,
Digitals / Barriers / Knock-outs, FX Range Accruals,
FX Baskets, Rainbow Options.

Equity
Basket Options, Index and single stock Digitals / Barriers / Knock-outs,
Autocallables, Cliquet, Mountain Range Options (Himalaya, Altiplano, Everest),
Variance swaps, Variance options, Dispersion swaps.

Commodity
Baskets,
Hybrids.

Hedge Fund / Managed Fund / Mutual Fund
Baskets,
CPPI Structures.

Credit
Asset Swaps,
Bespoke and index CDOs, CPDOs, CDO–Squared
Basket default swaps, X–to–Y to default baskets, Hybrids.

The Valuation Transparency Report will include such information as:
- Required underlying market data
- Model and calibration choices, along with reasons behind the choices, including details on determination of any model parameters which are not directly calibrated to market data
- Primary and secondary sensitivities

Valuation Discrepancy Report

With increased market volatility, clients need to better understand what factors can cause a difference in valuation. Therefore, a further value-added analysis that can be provided, on an ad-hoc request basis, is a detailed Valuation Discrepancy Report. This analysis compares any differences between a customer's valuation (counterparty and/or internal valuations) and the Prism Valuation service. The analysis provides customers with a detailed report that breaks down what, in Prism Valuation's opinion, are the maximum variances that can be caused by different market data inputs, model selection, calibration choices, parameter sensitivities, and numerical methods. The Valuation Discrepancy Report concludes with what is believed to be the maximum valuation deviation for that product.

Prism Valuation's series of strategic data partnerships provides the underlying market data required to calibrate valuation models:

- Interactive Data for access to exchange-traded equity and derivatives data, corporate action information, fund data and over 2.5 million bond evaluations
- ICAP, the world's premier interdealer broker, for underlying market data, including generally hard-to-obtain market data and private data
- GFI, a leading interdealer broker for credit data

The underlying modelling framework is based on numerical models from NumeriX, one of the foremost global providers of cross asset pricing and risk analytics for exotic derivatives and structured products. Using this foundation, Prism Valuation's quantitative analysts develop and extensively test appropriate structured product valuation engines.

Independent evaluations

Interactive Data evaluates approximately 2.5 million fixed income issues every day and provides independent valuations for a broad range of alternative investments, including single name credit default swaps (CDS), CDS index trades, interest rate swaps and bank loan prices.

Services include:

- Evaluations of global fixed income instruments including corporates, high yields, governments and agencies, securitised debt issues such as ABS, CMBS and CMOs, US municipal securities, hybrid securities and money market securities
- Fair Value Information Services for international equities, options and index futures
- CDS valuations*
- Interest rate swap valuations
- Bank loan valuations*
- Intra-day indicative valuations for equity and fixed income ETFs and ETNs
- Risk analytics data from Interactive Data's Fixed Income Analytics business

Interactive Data's teams of experienced evaluators incorporate available transaction data, credit quality information and perceived market movements into the evaluated pricing applications and models for fixed income securities.

**CDS and bank loan valuations provided by Markit Group Limited*

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Interactive Data Corporation (NYSE: IDC) is a leading global provider of financial market data, analytics and related services to financial institutions, active traders and individual investors. The Company's businesses supply real-time market data, time-sensitive pricing, evaluations and reference data for millions of securities traded around the world, including hard-to-value instruments.

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Interactive Data

The Correlation Myth

By Peter Cotton, Julius Finance

THE MODELING OF corporate defaults aspires to be a science but unfortunately many of the usual catalysts for scientific advancement are absent. Science tends to advance when new data or counterexamples to prevailing theories are found; very hard problems are tackled (sometimes for their own sake); or concerted longitudinal research efforts are funded. In the frenetic world of credit derivatives trading, these latter possibilities were remote and in a bull market with few defaults, counterexamples were difficult to come by.

In the absence of any real criteria other than expediency, model selection by traders, risk managers and rating agencies was often superficial. Stories substituted for theory, and one of those stories was the concept of a "correlation model". The correlation narrative goes something like this: "I know the probability of every company defaulting. I know the probability of every pair of companies defaulting. From this I extrapolate the probability of many companies defaulting." You probably do not have to be a trained mathematician to see the problem with this type of assumption.

This narrative is just that; a narrative. No compelling evidence for this bold extrapolation has been presented. In its place, a multivariate version of the Merton structural model is cited. It is true that in the Merton framework a specification of correlation between every pair of companies is sufficient, in the sense that it pins down the modeling of default clustering. The Merton framework is just one possible extrapolation however, and there are many others. If the particular choice implied by the Merton model is incorrect, then no amount of tweaking with parameters will ever give the right answer.

At the heart of many risk management systems is a tacit assumption: "correlation is enough". Did anyone check? If market projections are correct we will see dozens of investment grade defaults in the years to come and the question will be ever more pertinent. Investors need to be asking themselves: "Can the probability of thirty defaults be extrapolated from relationships between pairs of companies alone?"

These considerations apply to many types of factor models as well, because many are special cases of correlation models.

Testing the "Correlation Hypothesis"

To provoke discussion we turned to a repeatable system where statistically valid things can be said. Unlike finance, ten-pin bowling can be played over and over again. Arguably, pins display a tendency to fall over in much the same manner as companies. Their defaults, as we might call them, have knock-on effects which can sometimes bring down one or more of their colleagues. If broad brush statistical approaches are suitable for the risk management of trillions of investor money, then surely they can do a half decent job in the modeling the dependence structure of ten wobbly pins?

It turns out, they can't.

One can know the exact correlation between every pair of bowling pins and yet be completely wrong when extrapolating to the probability of five, six, or ten pins falling.

Does default clustering resemble bowling pins, the Merton model, or neither? We don't know, but it seems prudent to develop frameworks which can accommodate a wide variety of possibilities, rather than one pre-specified extrapolation. This requires moving beyond the correlation paradigm.

Market Driven Models

Over the counter credit derivative markets contain a wealth of information about market projections for defaults in different portfolios over various time horizons. Congealing this information into a coherent, arbitrage free description is critical for relative value analysis of many types of structured credit securities. Markets provide us with further evidence that standard credit models are overly rigid and normative.

For example, base correlation models can return nonsensical implied correlations. In addition, most correlation models can fit one or two tranches, but then make strange predictions about other tranches.

Copula models of various flavors have been tried but viewed through this lens it is difficult to imagine picking the right one off the shelf which just happens to calibrate to all maturities and all tranches at the same time. Copula models are unlikely to ever provide arbitrage free valuation of synthetic CDOs for this reason. The "Copula approach" also invites the modeler to leave 95% of their financial intuition at the door, which we think is dangerous.

A New Approach: Model Fusion

We have coined the term "model fusion" for a collection of techniques we have developed that allows one to combine many different constituent pieces into a global, unified valuation tool that is arbitrage-free. This approach overcomes many of the shortcomings in the current standard valuation tools available. Some of the practical solutions that are now possible include:

- A cross-portfolio, cross-maturity relative value tool – Standard credit models assess, and arguably over-fit, one maturity at a time. We are now able to consider all available credit data simultaneously, including credit default swaps, indexes and baskets of differing maturities, attachment points and portfolios.
- A solution for CDO^2 – Several papers have suggested that the conditional dependence structure of tranche losses comprising a CDO^2 approximates the Normal Copula. To be polite, this is recognized as less than optimal by at least one top tier investment bank (who are using model fusion to value CDO^2).
- A solution for counterparty risk and margining –Another application of model fusion is counterparty risk modeling. Not only does model fusion provide a new path to market consistent default simulations, it can also be used to combine interest rate and credit models – thereby providing the crucial simulation capability.

Model fusion has the potential to solve many other problems in finance but in increasingly illiquid credit markets the techniques are particularly pertinent. A unified arbitrage free model considering all maturities, all attachment points, and all portfolios simultaneously permits the best possible synthesis of market data. This once seemed like an unattainable holy grail but is now a necessity.

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JULIUS FINANCE™

Leveraging ABSNet™ to Determine Fair-Value Marks for Structured Finance Portfolios

By David Fiske, Manager of European Analytical Services, Lewtan Technologies, Ltd.

IN RESPONSE TO the ever increasing challenges of determining fair-value marks for structured finance portfolios, Lewtan Technologies' ABSNet leverages over 20 years of industry expertise to address these demands.

Lewtan Technologies' ABSNet provides two required inputs in determining independent fair-value marks for structured finance portfolios: (1) the most extensive deal model library of European structured finance instruments and (2) the broadest set of credit performance data on the underlying assets supporting these transactions. ABSNet's inputs can be utilised as a primary source for mark-to-model valuations or as a confirmatory source to validate market quotes with an independent analysis. ABSNet cash flows and data help organisations address IAS39 or IFRS7 requirements with accurate and independent tools for pricing ABS bonds based on a library of over 1000 European ABS deals covering more than 5000 bonds.

ABSNet data and cash flows are available in a variety of formats. They can be accessed on-line, via an Excel-based Add-in tool, or directly through an API.

Pricing with ABSNet's COM object in Excel

ABSNet cash flows perform pricing and credit analysis at the portfolio or individual bond or deal level. By incorporating collateral performance data, ratings information, and user-provided spread and index rate assumptions, prices of each asset in the portfolio will always be in line with market conditions. ABSNet's COM object has flexible reporting capabilities to address audit requirements and to feed internal reporting systems.

In addition to affording a bond by bond multi-scenario analysis, ABSNet's pre-built COM application can support matrix pricing methodology that identifies similar credit cohorts and prices bonds according to user-defined criteria such as asset class, geography, rating and weighted average life (WAL). First, users define a number of inputs which determine the matrix to which each instrument applies.

Second, additional inputs determine the exact spread to apply to each bond. This matrix spread, or base discount margin, can then be further manipulated through a system of adjustments.

Adjustments to the base discount martin can be made per bond, or for entire deals or groups of deals (based on wildcard matching) and currencies. In all cases adjustments can be stratified by rating or other credit tiers to better reflect what is happening in the market.

Using ratings information and performance data inputs for prepayments, defaults and delinquencies from ABSNet, the system ensures that pricing results continuously reflect the most current deal and bond performance and reflects the latest developments in the market.

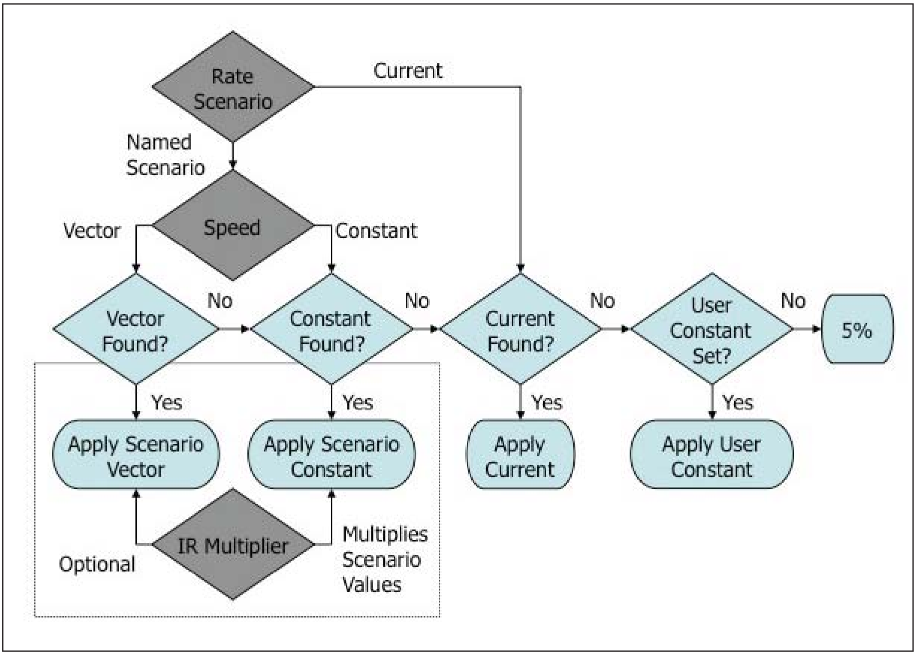
The pricing tool accepts market and historical inputs to better gauge the accuracy of derived prices. By checking results against these secondary inputs, one can quickly identify outliers requiring further investigation.

ABSNet and the ABSNet pricing engine, data and cash flow models are used by leading market makers and global commercial providers of evaluated prices.

Reporting

Reporting through ABSNet's cash flow engine is easy. The COM application has a comprehensive and flexible reporting environment designed to meet the most stringent audit requirements. The system generates user-defined reports for portfolios of assets that can form the inputs to internal risk management systems and portfolio evaluation tools. It generates reports in CSV or Excel formats.

A few canned reports are also available on the system. For each bond, the



system can generate a cash flow report that details all relevant outputs.

Credit Analysis

The cash flow engine provides multiple tools for in-depth analysis of portfolios and deals. A first loss solver allows quick measurement of the relative strength or weakness of a bond compared to other assets in your portfolio.

This tool also calculates weighted averages and other statistics based on pool or tranche balances (current or original). Results are normalised for currency variations.

The portfolio drawdown function provides access to elements of cash flows for either the bonds themselves or for the underlying collateral. These cash flows can be expressed as whole values, or percentages of balances. In this manner you can quickly assess the relative strength or weakness of individual bonds.

The multiple scenario stress testing function has been used by a rating agency that employed ABSNet models to develop a consensus view on how each of the bonds in a deal would perform under a myriad of scenarios. The tool accepts probability inputs to quickly build your own view to how deals will perform under a variety of situations.

Interest rates can have significant impact on the performance of securitised deals, and the cash flow engine provides mechanisms for careful application of these inputs to your analysis. Interest rates are applied according to scenarios that utilise two additional inputs – the speed (which can be either constant or vector, to incorporate forward curves) and an interest rate multiplier. The multiplier simply adjusts scenario values up or down by a given percentage from their initial value.

Careful application of these tools will give you a broad picture of the performance of your portfolio as well as of the risks that may be lurking in the future.

Conclusion

ABSNet offers a variety of data and analytical options for users throughout an organisation. For immediate pricing analysis on the trading desk, ABSNet can be utilized on-line, through Excel, or directly through in-house applications that utilise ABSNet's API. For credit analysis and risk management of existing positions, ABSNet is the leading structured finance application in Europe. To identify outliers of credit risk, to generate trade ideas, and to organise bond cohorts with similar performance characteristics, ABSNet's Comparison and Benchmark features can be used. With a comprehensive set of data and analytical functions, ABSNet helps derive intrinsic 'level 3' prices that permit firms to demonstrate appropriate regulatory compliance in the back-office for the most illiquid of OTC securities.

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ABSNET

Using Market Data to Accurately Price Fixed Income Securities

By Yiannis Tsiounis, CEO, Moody's Credit Quotes, Inc, a wholly owned subsidiary of Moody's Corporation

PRICING OF SECURITIES that trade in the Over The Counter (OTC) markets has always been challenging. For better or worse, OTC markets represent a large portion of the traded assets worldwide. In fact, the majority of non-government issued fixed income securities is traded over the counter. Due to the inherent opaqueness of the OTC market and the current market distress, all institutions which invest in fixed income are under significant pressure to more accurately and transparently mark their portfolios.

There are fundamentally two sources of pricing for OTC instruments:

• Dealer (or broker) provided marks, sourced either directly or indirectly
• Observable market prices.

In the first case, institutions either ask from their dealing counterparty a "closing mark" for each position they hold, or for a universe of positions, or they contract with a third party which collects these closing marks from multiple dealers and provides an aggregated or average mark.

In the second case, institutions use either the pricing information they receive in their regular course of business from their dealing counterparties, or they contract with a third party which collects this pricing information and provides aggregated pricing data.

This market derived pricing information can either be used directly to mark or as a key driver of evaluated pricing models.

To understand how each methodology differs, it is important to look under the

> "The sheer volume of emails and the fact that each email is different makes it difficult for traders to effectively act on this information. In response to this need Moody's Credit Quotes® provides price-discovery tools that mine the emails in real time and extract all the relevant pricing information."

covers in the workings of the OTC markets. Let us follow a typical scenario for the lifetime of a trading position to illustrate the facts. First, a buy-side investor/trader will receive information from the dealer counterparties s/he interfaces with about pricing of a variety of securities. This pricing is almost always communicated via an email that is sent over the Bloomberg® system. These emails are being sent throughout the course of the day by the traders on the dealers' side and sent over to all their clients (the investors) in the buy side.

The typical investor receives thousands of these emails every day, containing a wealth of pricing information, as well as commentary, research opinions, and other information.

The sheer volume of emails and the fact that each email is different makes it difficult for traders to effectively act on this information. In response to this need Moody's Credit Quotes® provides price-discovery tools that mine the emails in real time and extract all the relevant pricing information.

Upon the investor's execution of a trade, this will be booked in both counterparties' books. The stream of emails of course continues past the time of the trade. Therefore an investor that has a position in their books can quite accurately mark to market that position by reviewing the emails received throughout the day or via the use of a specialized tool as above.

On the dealer side, the trader who faced the investor in the execution is mandated to mark this position to market at the end of each day, as well as the other positions accumulated in his book, and a variety of issues that he has not traded or does not own, but which are in the same sector or classification as the sector he specializes in. The dealer then utilizes this marked-to-market information to supply their customers with any pricing information requested.

Due to the nature of the OTC markets however, and since there is no specific "right or wrong" price, the marked to market level that each trader on the dealer's side assigns to their book is not always in line with where the market trades these securities at.

For example, a trader who is long a particular issue may be inclined to mark to

a higher price; or a trader who has not traded a specific issue for a long time but is asked to provide a price for it may not refresh the price since the last time. In addition, there is nothing to guarantee that getting prices from a lot of dealers will net out these mismarking effects, as many times the dealers are on similar trades, so they could all mismark in the same direction: witness the "crowded" trades on structured and securitized issues (ABS, MBS, CDOs) as an example. However, no matter where a trader at a dealer desk decides to mark their positions, when they "make markets" by sending out emails, their levels are in line with the actual price of each security. If an issue's indicated price is too low, someone will buy it and the trader will have to increase their price; and vice-versa if the price is too high.

Therefore, the indications sent out by the dealer desks are self-correcting and converge to the correct price for each security. For this reason, pricing data that is derived directly from live market indications can produce accurate prices that are in line with the actual levels where one can execute a transaction in the marketplace.

All through the organization—from traders to risk management to the back office – participants are under pressure to more accurately and transparently mark their books. For this reason market participants are increasingly turning to OTC pricing sources that offer an alternative to dealer sourced pricing. Whether market participants are using the pricing derived directly from the market for primary pricing, as a secondary source, or simply as a sounding check board against incumbent pricing, the additional transparency and truer reflection of market activity gained warrants consideration.

Challenges in the valuation of complex OTC structured products

Dr Greg Cripps PhD, President and CEO of Prism Valuation, discusses the requirements for assessing the fair market value* of complex OTC structured products

The Structured Product Market

COMPLEX OTC STRUCTURED products have been around since the early 1990s but in the last ten years in particular, the number, variation and complexity of structured product deals has exploded. These new products span all major asset classes, with underlyings in interest rates, FX, equities, commodities, asset-backed securities and credit.

As a result of this revolution, there are a huge number of outstanding complex deals. These are typically small to medium-sized private placements, with equivalent notional sizes in the range of USD 1m-20m, and which were issued by counterparties who were deemed very creditworthy before the credit crunch.

Evolution of structured products

Investors chasing higher returns via complex exposures to finely-tuned specific pay-out formulae, were and remain, the driving force behind complex structured products. These agents are seeking either to monetise a definite market view (*eg* bullish, bearish, spread compression, spread widening, etc) or to provide desirable diversification, including exposures to volatility and/or correlations. Structured product deals are also driven by dealers seeking fees and at the same time, issuers seeking cheap funding, thus creating a market where all benefited.

The evolution of structured products was further facilitated by the broadening and deepening of liquidity in the underlyings of various structured product hedge instruments. This was complemented by the increased acceptance of trading in the associated underlying's option markets, and the development of sophisticated risk management analysis and financial structuring capabilities.

Yet another important contributing factor has been the exponential growth in the availability of cheap and plentiful "number-crunching" computing capacity which is essential in the management of complex structured products.

** FASB statement 157 defines 'fair market value' as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date".*

Difficulties in obtaining structured product valuations

Complex structured product deals generally have low secondary market trading. Price discovery outside the dealer or hedger/ counterparty involved in the initial offering is often very challenging.

Since the onset of the credit crunch, relying solely on counterparty marks to provide an independent fair market value1 is, in most cases, undesirable. So how should investors value their complex structured product deals?

A timely direct trade price is the optimal method for marking a given deal. Unfortunately, given the inherent illiquidity, timely last deal prices are not generally available for complex structured product deals. The next best approach from an accounting and risk management perspective is therefore to obtain a valuation, i.e. a well-explained estimation (using all the relevant and available related market information) of the price at which a particular deal would most likely trade, if there are two willing, non-distressed transacting parties.

Comparison of valuation methodologies

Some valuation services use a "consensus grid" pricing method for complex structured product valuations. In this approach, valuations of a small set of benchmark deals, either real or constructed, are obtained from a small set of dealers. These benchmark deal valuations are used as points on a grid and specific deal valuations are obtained by interpolation or extrapolation methods in the grid.

However, this method often suffers from a lack of available benchmark data from unbiased providers. Additionally, there will be a significant qualitative divergence of seasoned deals from the general at-the-money benchmarks that underpin the pricing grid. Deals that are not currently in the "mainstream" often cannot be reliably priced using the consensus grid method.

A bottom-up valuation, where each deal is priced individually on its own merits, beginning with reference to the original deal documentation (prospectus or deal confirm) and using reliable, complete and up-to-date underlying market data, circumvents the issues associated with the consensus grid pricing method. However, this method requires both financial modelling expertise and access to the best sources of market data.

The Prism Valuation approach

At Prism Valuation we apply this kind of bottom-up approach to our valuation services

and each deal is assessed using customer supplied or sourced confirms. Prism's primary strategy is to provide services that emulate the pricing and risk analysis capabilities of a structured products dealer but at the same time being completely unbiased and independent. This approach also means that we are able to value all possible structured product deals in the market (where underlying data is available) as we start from first principals when valuing any given deal.

Prism's philosophy in providing valuation services is best captured by the phrase "People–Data–Models". Decisions concerning the appropriate valuation framework are made by knowledgeable people with many years' combined front office experience at major structured products dealers. We use techniques and processes that are consistent with those used by the dealer community and originators of these products in order to replicate the likely price at which interested parties would transact a given deal.

The result is a rigorous mathematical modelling and computational framework combined with targeted calibration strategies, constructed using as much of the available liquid underlying data as possible. This approach effectively covers all the risks inherent in the deal, while also minimising the use of any unobservable parameters.

While it is correct to say that these three components of successful valuation – people, data, models – are all important, the process for obtaining reliable and independent underlying data is often the hardest element to sustain. All the effort required for creating an appropriate framework for valuation is lost if the underlying data is not the most appropriate to the deal at hand, or does not reflect the current state of the underlying market. Furthermore, in the bottom-up valuation approach, underlying data must also come from an independent and unbiased source, i.e. real deals or real two-way indications.

At Prism Valuation, we depend on the highest quality, independent, reliable market data. Widely accepted as a global benchmark, ICAP data is derived from the dominant primary markets for the instruments concerned and provides a high level of granularity. For this reason, ICAP is our preferred source of interest rate, inflation and FX data.

For further information please visit
www.prismvaluation.com

prism VALUATION

Valuing Structured Finance Assets: Valuing a 2006 Vintage UK RMBS Deal Under Multiple Scenarios

By Peter Jones, global head of Standard & Poor's new valuations division – Valuation Scenario Services

WHEN VALUING ANY RMBS deal, market participants require a pricing mechanism that is reasonable, consistent and transparent for calculating the net present value (NPV) of promised cash flows. The credit performance of the underlying pool of assets including the timing and magnitude of potential loss severity upon default need to also be taken into consideration. The difference between valuing a specific subordinated tranche along the risk waterfall at 100% or at less than 50% of par can be as little as a one-year difference in the assumption made regarding the timing of liquidation of collateral following default.

Scenario analysis research and output projections on the following 2006 vintage UK RMBS Non Conforming Loan were run on ABSXchange™ under four separate hypothetical scenarios of increasing economic and credit stress. ABSXchange™ analytics enable the simultaneous analysis of multiple scenarios on the same structured finance deal tranche according to both existing and assumed future market conditions.

Prepayment rates of 10% and 20% were applied. Prepayment rates were set at 10% in scenarios 1 and 2, and then moved up to 20% in scenarios 3 and 4 based on the presumption that U.K. policymakers were likely to lower the official bank rate. The four test scenarios for the deal are as follows:

	Cumulative Default Rate	Loss Severity	Prepayment Rate
Scenario 1:	5% over 9 Months	10% (12 Months until liquidation)	10%
Scenario 2:	10% over 12 Months	20% (12 Months until liquidation)	10%
Scenario 3:	15% over 18 Months	30% (12 Months until liquidation)	20%
Scenario 4:	20% over 24 Months	40% (12 Months until liquidation)	20%

Application of Discount Margin

Three approaches for applying discount margins to calculate the NPV of the tranches were used to account for a general decline in market confidence, increased uncertainty about the timing of anticipated cash flows, and the subsequent broad re-pricing of credit risk due to factors other than modeled rates of default, loss severity, and prepayments.

1. Original quoted margin set at origination.
2. Double the original quoted margin.
3. Multiple of original margin according to quartiles of spread margin at origination.

Results

The scenario analysis provides valuable insights about the performance characteristics under different credit stress scenarios, particularly the lifecycle or timing of recognizing the anticipated cash flows according to the terms of each tranche.

Observations

1.The top two tranches have already paid down.
2. Current conditions, 5% defaults over the next nine months and 10% loss severity recognised in 12 months, are already more stressed than the lowest tier, tranche "J," can bear under any scenario or approach to assigning a discount margin.
3. Investors, up to and including tranche "F" are projected to be ok across all four stress scenarios that contain up to a 20% default rate, occurring over the next two years culminating in 40% loss severity after collateral is liquidated one year after default.

Table 1: 2006 Deal - Original Margin

Tranche	S&P Rating	Coupon	1	2	3	4
A	AAA	5.9%	R	R	R	R
B	AAA	4.8%	R	R	R	R
C	AAA	6.0%	100.0%	100.0%	100.0%	100.0%
D	AAA	4.9%	100.0%	100.0%	100.0%	100.0%
E	AA	6.1%	100.0%	100.0%	100.0%	94.4%
F	AA	5.1%	100.0%	100.0%	100.0%	94.0%
G	A	5.2%	100.1%	100.1%	81.9%	10.0%
H	BBB	5.6%	100.0%	80.6%	6.8%	6.8%
I	BB	8.8%	83.6%	6.4%	6.4%	6.4%
J	BB	8.8%	0.0%	0.0%	0.0%	0.0%

= Net Present Value >90% (green)

R=Redeem

= Net Present Value <90%>70% (blue)

= Net Present Value < 10% (red)

Table 2: 2006 Deal - Double Original Margin

Tranche	S&P Rating	Coupon	1	2	3	4
A	AAA	5.9%	R	R	R	R
B	AAA	4.8%	R	R	R	R
C	AAA	6.0%	99.3%	99.3%	99.6%	99.6%
D	AAA	4.9%	99.3%	99.3%	99.6%	99.6%
E	AA	6.1%	97.6%	97.6%	98.3%	92.7%
F	AA	5.1%	97.6%	97.5%	98.3%	92.2%
G	A	5.2%	96.5%	96.5%	80.0%	9.9%
H	BBB	5.6%	93.6%	75.8%	6.8%	6.8%
I	BB	8.8%	69.9%	6.3%	6.3%	6.3%
J	BB	8.8%	0.0%	0.0%	0.0%	0.0%

Table 2: 2006 Deal - Double Original Margin

Tranche	S&P Rating	Coupon	1	2	3	4
A	AAA	5.9%	R	R	R	R
B	AAA	4.9%	R	R	R	R
C	AAA	6.0%	99.3%	99.3%	99.6%	99.6%
D	AAA	4.9%	99.3%	99.3%	99.6%	99.6%
E	AA	6.1%	95.4%	95.3%	96.7%	91.1%
F	AA	5.1%	95.2%	95.1%	96.6%	90.6%
G	A	5.2%	93.2%	93.1%	78.1%	9.9%
H	BBB	5.6%	82.4%	67.3%	6.7%	6.7%
I	BB	8.8%	50.9%	6.1%	6.1%	6.1%
J	BB	8.8%	0.0%	0.0%	0.0%	0.0%

= Net Present Value >90%

R=Redeem

= Net Present Value <90%>70%

= Net Present Value < 10%

= Net Present Value <70%>10%

4. The downside of the credit enhancement waterfall, however, does start to affect this structure beginning with tranche "G," resulting in large differences in modeled valuations according to the severity of the assumptions in each scenario.

As housing market fundamentals deteriorate and scenarios transition from 2 to 3 to 4, prepayments benefit upper-tier bond holders largely at the expense of mezzanine and subordinated bond holders as durations extend while credit risk uncertainty simultaneously rises. As economic and credit stresses work through the housing and financial markets, the present values of lower-tranches begin to decline under higher-stress scenarios because projected collateral losses more than offset any discounted increase in future interest payments occurring from slowing prepayments.

Since the subordinated and equity tranches are highly dependent on maintaining some minimum semblance of the status quo existing at origination, any deterioration in expected future cash flows can have a large negative impact on calculated NPV's.

Conclusion

The question of timing, or the recognition of structured cash flows, is of the utmost importance for each tranche along the waterfall whether receiving anticipated inflows in the future, or recognising unanticipated losses arising from defaults and subsequent collateral liquidation. Investors with exposures to RMBS need to be aware of risks to the timing of the recognition of collateral losses in an event of default in the underlying pool of assets and thus, place a high priority on the valuation inputs used for prepayment, loss severity, and default.

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This article is based on a research report 'Valuing Structured Finance Assets 102: Timing Is Everything' produced by the Market, Credit, and Risk Strategies group (MCRS), a newly formed, separate and independent research team at Standard & Poor's.

STANDARD
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Valuation of OTC and Illiquid instruments: Controlling Operational Risk

By Stephen Choate, CEO, ValueLink

COUNTERPARTY COLLECTIONS WILL continue to have a significant role in the valuation of OTC and illiquid instruments by buy-side institutions. The biggest problem with counterparty collection is the operational risk involved in a largely manual process. By controlling this operational risk users can confidently continue to rely on counterparty prices as an integral component of their valuation process. ValueLink provide solutions which automate the manual processes and integrate counterparty data in a price validation process, giving reliable control of the operational risk.

Continuing Role for Counterparty Collection

Counterparty pricing has a long established role as a source for mark to market pricing. There are several alternatives such as third party evaluated pricing or in house (but segregated) modelling. Best practice, both in regulations such as FAS 157 and in the operations of leading participants, has involved the use of such sources, but counterparty collection will remain part of the mix: first because there will always be instruments not covered by other sources; second because best practice requires more than one source and reconciliation where this is practicable; third because the counterparty price is a market price rather than a theoretical price. This last point has been amply demonstrated in recent volatile markets where we have seen counterparty prices for individual instruments updated on a significantly more timely basis than the asset class updated evaluated prices.

Operational Challenge of Counterparty Pricing

The challenge posed by counterparty pricing, whether it is used as a primary secondary or reconciliation source, is in the collection, processing, control and distribution of the data. Many institutions are running systems which may have been functional when dealing with a handful of securities, but which represent a serious operational risk when volumes have increased, sometimes to several hundreds or thousands of positions. Collection is often to an individual email address, data read from PDF, word or excel attachments and manually input to spreadsheets maintained on an individual basis, with little coordination or consistency oversight and without validation controls. Often the process is performed by numerous fund accountants or client account managers, with multiple collections of the same data. Risk of error is high and there is limited overall control of the operation.

Such processes also become expensive in terms of headcount, often comprising relatively expensive staff. The operational risk exacerbated by the tedious nature of the manual process, demotivating to staff who have other, more intrinsically interesting, tasks. Such processes also fundamentally lack scalability and, with the associated levels of operational risk, this can constrain a fund manager or fund administrator's strategic development.

Controlling the Operational Risk

The solution is to automate the manual processes and to bring this part of the valuation process into the overall control environment appropriate to the production of validated Net Asset Valuations. A significant part of any solution will involve the automated extraction of data from embedded attachments to broker distributed emails, but to be worthwhile this must be combined with a process which identifies missing attachments or missing or moved data fields, which validates extracted data to previous collections and, where possible, also to other sources, which produces appropriate reporting and audit trail. The counterparty collection process should be integrated into the price validation process.

ValueLink solutions

ValueLink have developed solutions which combine quickly adapted automated extraction of broker data within our price validation control process. ValueLink has a long established reputation as a provider of price validation services to fund managers and administrators. These services are based on a database control process which enables us to provide clients with large validated pricing files 15 minutes after relevant pricing points. As the market demand for manually sourced pricing has grown we have developed our systems to include such data, but always integrated with our overall systems and procedures.

Our approach to the extraction of counterparty prices has culminated in the release of ADEPT (Automated Data Extraction Processing Tool) a bespoke solution to the extraction of the many data sets that are required by our clients but which are only available in an em-

bedded document attached to an e mail or from a website. ADEPT automates the whole process from receipt of data to data upload, together with exception notification, as detailed below:
• Data source definition
• Schedule definition (data collected or received)
• Identification and definition of data sets required
• Data validation configuration
• Exception handling notification
• Data upload to ValueLink database

Once in the database the extracted data is subject to the range of validation controls and reports. These will include point to point validation processes and clients can add validation to another source, such as an evaluated price or their own modelled price, clients can set tolerance levels and specify tailored reports for control and audit trail.

The speed with which ADEPT can configure new broker statements, the automated extraction and the processing speed designed into our database mean that ValueLink provides a validated counterparty price file with an exceptionally fast turnaround from the point at which the counterparty makes the data available. The solution is available as a bespoke managed service and benefits from the full range of client administration and query resolution services. ADEPT is also relevant to more than just the price data, it can extract process and reconcile any data set included on a broker statement. It can therefore be used as a control over completeness of transaction processing and position control. The ValueLink solution can therefore turn the counterparty price collection process from one which might otherwise have significant intrinsic operational risk into one which is not only internally controlled but which can significantly benefit the overall post-trade control environment.

Controlled Operational Risk

The operational risk associated with counterparty collection can be controlled. This can be achieved in a cost effective solution which enables timely process of data into valuations. The solution is relevant to the full range of collected data and is scaleable. This enables counterparty collection to remain a key component of the valuation process for OTC and illiquid instruments.

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