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## Introducing Analytic Feed Services

We have seen a trend within many of our client organizations for them to move to a centralized data repository for terms and conditions as well as analytic values. This is a direct response to regulatory and risk management initiatives which have led to the desire for a "golden source" of data. Without a centralized data repository, financial institutions run the risk of having the same security with inconsistent information, potentially leading to confusion at a minimum and trade, reporting, or risk management errors in the worst case.

CMS BondEdge, an Interactive Data division, has been providing analytic feed services to numerous large financial institutions for several years. These clients have not required the BondEdge® product itself; rather, their needs have been limited to security-by-security analytic values to feed into data warehouses and other products potentially for use across an enterprise. These relationships have typically been within the market data or back office departments. In many cases, these relationships exist while at the same time, the front office is utilizing the BondEdge product.

We recently embarked on a project to create a more automated capability for accessing the analytic feed, in order to better service our existing service bureau clients as well as to more broadly distribute this capability. We are finalizing the offering and wanted to bring it to your attention as your organization may be pursuing sources for fixed income analytics to feed a centralized offering.

The analytic feed service offers a variety of static and dynamic risk measures which can be accessed on a daily, weekly, or monthly basis. Included in the feed capabilities are all asset types that are in the CMS BondEdge database as well as the extended database (including municipals and mortgage pools).

*If you have interest in these new services, please contact your CMS BondEdge Representative to receive additional information.*

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## 2006 CMS BondEdge Annual Fixed Income Workshops

**Last chance to register** for the **2006 CMS BondEdge Annual Fixed Income Workshops** in New York and Chicago! *Time is running out and space is limited!*

This year's workshops will again be presented in two tracks, with topics covering both fixed income theory as well as practical application of various features in BondEdge. This year we are featuring eleven sessions that are specifically designed to address current issues in fixed income as well as an optional session for one-on-one training with a CMS BondEdge senior consultant. We hope you will be able to join us this year at one of the following locations:

<p><b>Wednesday, April 19</b>                  New York (Downtown)                  NY Marriott Financial Center</p>	<p><b>Friday, April 21</b>                  Chicago (North Michigan Avenue)                  The Drake Hotel</p>
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While the topics are presented in lecture format, the event is intended to be as interactive as possible; we encourage attendees to ask questions during the sessions or during the break times provided. This year's workshop sessions are:

	TRACK A	TRACK B
7:30a	Registration & Breakfast	
8:30a	Keynote Address	
9:30a	Dissecting Returns-Advances in Performance Attribution	New CMS BondEdge Fixed-Rate Prepayment Model
11:00a	AM Break	
11:15a	New Developments in CMS BondEdge Benchmarking Tools	Understanding Credit Derivatives
12:30p	Lunch: Q&A Panel & Wishlist Survey	
2:00p	BondEdge & Municipal Markets	Prepayment Modeling: Home Equity & Other Collateral
2:50p	PM Break	
3:00p	Hands-On Training Sessions	Key Rate Durations: Observations & Oddities
3:50p	PM Break	
4:00p	Cocktails & Hors d'oeuvres	Yield Curves: Construction & Interpretation
4:30p		
4:50-6:00p	Cocktails & Hors d'oeuvres	

*To view detailed session descriptions, please [click here](#).*

*To register, please [click here](#).*

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## CMS BondEdge to Present at Performance Attribution & Municipal Conferences

CMS BondEdge will participate in two World Research Group conferences to be held in New York City in the near future: The 4th Annual Fixed Income Attribution Analysis Forum on April 25-26 and the Inaugural Municipal Bonds Summit on June 27.

During the Fixed Income Attribution Analysis Forum, Louis J. Gehring, Senior Vice President and Product Manager of BondEdge, will conduct a three-hour in-depth, pre-conference workshop, "How to Deliver Greater Accuracy and Detail to the Fixed Income Attribution Analysis Process", on Tuesday, April 25 from 8:30-11:30 AM. The workshop will provide an intensive examination of the most critical challenges to fixed income attribution analysis and will discuss the merits and drawbacks to various measurement approaches.

Later on in the day, Lou will host a 45-minute session, entitled "Fixed Income Performance Attribution: Precision and Flexibility Trade-offs and Challenges", from 3:15-4:00 PM, which will focus on some of the key areas driven by recent market demand for increased precision and greater flexibility.

Next, during the Inaugural Municipal Bonds Summit on Tuesday, June 27, Lou will speak on a 45-minute panel discussion, "Performance Attribution Analysis and Tools for Municipal Bond Funds", from 11:00-11:45 AM, which will include such topic subsets as factors in achieving and measuring returns and methodologies for performing factor-based and returns-based analysis. CMS BondEdge will also serve as Silver Sponsor for the event.

*For more information about either event or to register, please contact Christopher Torres at (646) 723-8039 or via email at [christopher.torres@worldrg.com](mailto:christopher.torres@worldrg.com) and mention CMS BondEdge.*

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## New CMS BondEdge Research Publication

CMS BondEdge announces the publication of a new white paper titled "The Impact of Additional Loan Level and Market Data on the CMS BondEdge Fixed-Rate Prepayment Model", written by Senior Vice President and Director of Quantitative Research, William Burns, Ph.D. The paper examines the effect of new loan level data now available in the mortgage markets on the CMS BondEdge fixed-rate prepayment model. The article discusses enhancements made to the functional form of the fixed-rate prepayment model to accommodate market variables such as the spread at origination (SATO) and the slope of the borrowing curve (SBC).

*Clients may access the paper via the BondEdge Private Client Site. The paper is also available by request from <http://www.interactivedata-fia.com/whitepapers/login.asp>.*

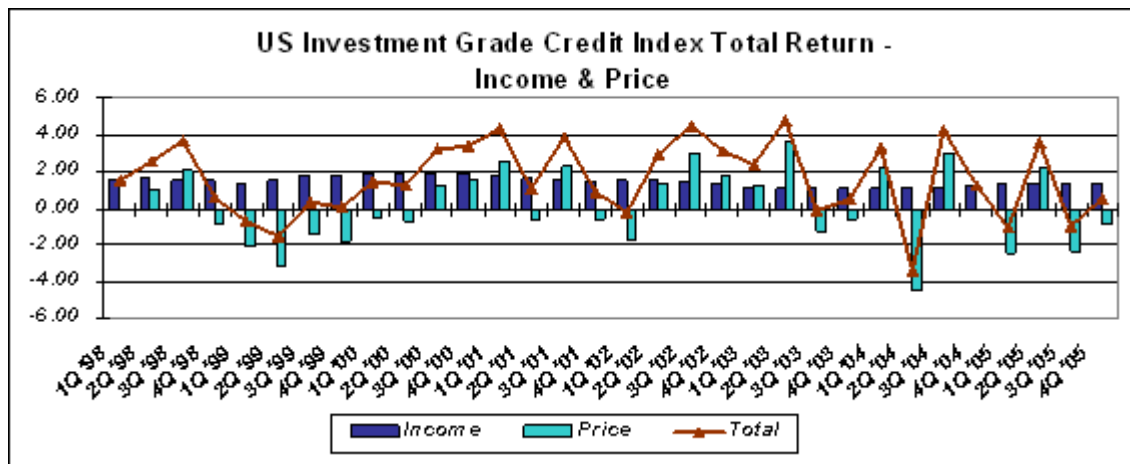
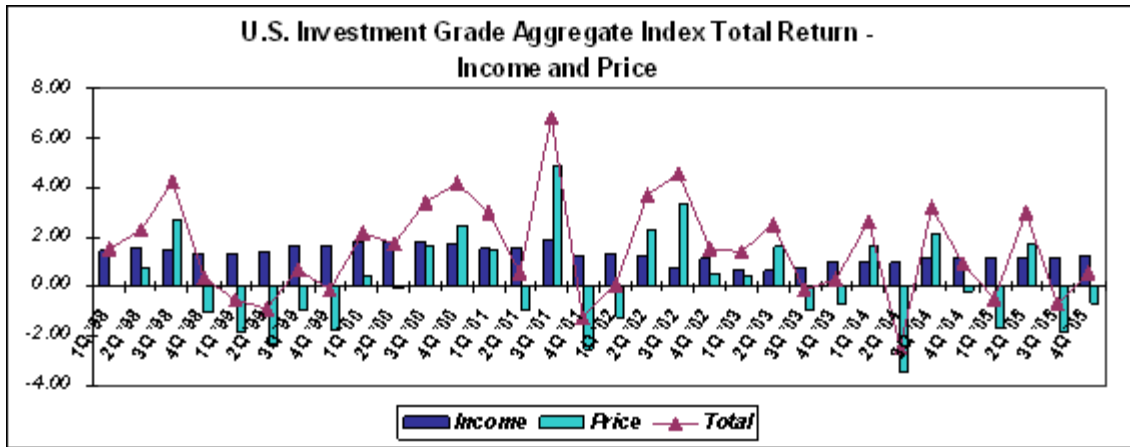
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## Performance Attribution

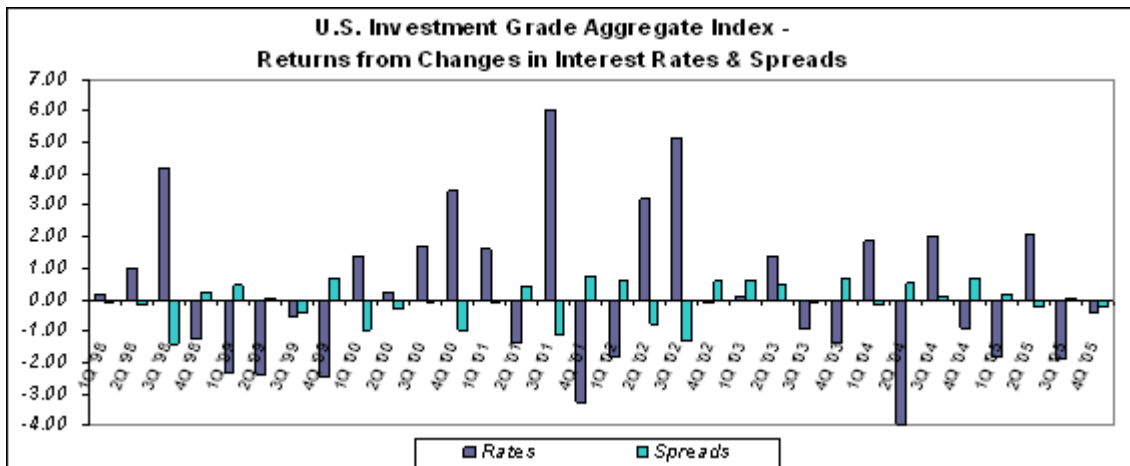
Performance Attribution continues to be one of the most talked-about aspects of fixed income portfolio analysis, and for good reason – it is challenging, complex and critical to the way investment strategies are analyzed and performance is evaluated. While portfolio analysis is typically focused on the present and the future, we recall the old saying, "those who forget the past are condemned to repeat it". We believe an historical perspective on Performance Attribution can provide a helpful context in which to evaluate today's results, so in this article, we use the Factors-based Performance Attribution analysis in BondEdge to review the sources of return for the overall investment grade market and for the investment grade credit market over the past eight years.

The graphs below show the quarterly returns for two well-known Aggregate and All Credit indices from 1998 through 2005, with the sources of returns divided into Price and Income components.

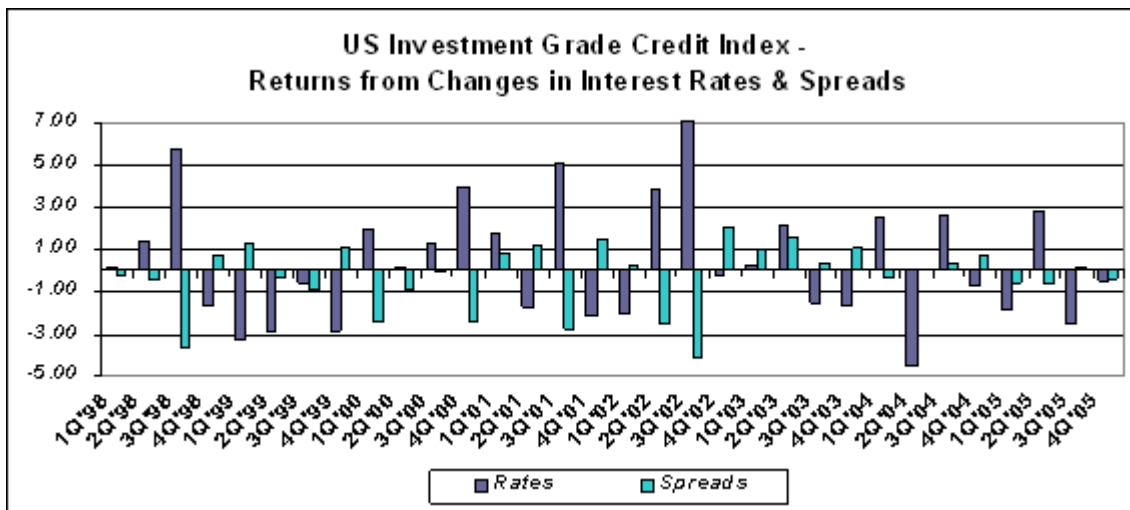


We can see that while the Income return for the indices was usually sufficient to ensure a positive Total return, the overall return was negative for the Aggregate index during 8 of the 32 quarters, and during 7 of the 32 quarters (with one quarter showing only a 4 bp return) for the Credit index, so roughly 25% of the time the Income return was not sufficient to overcome the negative effect of rising interest rates and/or widening spreads. The average quarterly return for the Aggregate index was 1.54%, with a high of 6.80%, a low of -2.44% and a standard deviation of 2.02%. The average quarterly return for the Credit index was almost the same, at 1.59%, but the highest return was only 4.81% and the lowest return was -3.42%, much lower than for the Aggregate. Interestingly, the standard deviation of the Credit index returns was 2.04%, almost identical to that of the Aggregate. So, at least for this time period, the risk/reward profile of both indices appear to be consistent in that an investor would have accepted the same degree of volatility in return for earning the same return. Would we have expected this result? In theory, the Aggregate's Treasury component would reduce its expected return relative to the Credit index, while the MBS should offset the lower return offered by Treasuries. Would we expect these two forces to offset each other, especially as the Treasury component of the Aggregate has been declining over time?

We now look more closely at the source of Price return for the indices, divided into interest rate and spread moves. For the manager of a diversified portfolio with sector allocations consistent with that of the Aggregate index, history demonstrates that interest rate risk continues to be the dominant risk factor in explaining returns. We can also clearly see the negative correlation between interest rate and spread moves – with few exceptions, when the price return from interest rate shifts is positive, the return from spread changes is negative.<sup>1</sup> However, in most of 2003 and in the 4th quarter of 2005, this was not the case:



Turning to the All Credit index, we see that while changes in interest rates do contribute more to overall Price return than changes in spreads, the difference is not nearly as pronounced as with the Aggregate and there are some quarters where spread movements dominated the impact of changes in interest rates. The negative correlation is also apparent, with certain exceptions. The average quarterly price return over this period due to changes in interest rates was +0.381, due to general downward trend in rates over most of the period. However, 14 of the 32 quarters still showed a negative contribution to price return from interest rate moves; we conclude that interest rate volatility is still an important factor despite the general trend. The average quarterly price return due to changes in spreads for the All Credit index was -0.266, as the losses sustained during periods of widening spreads were greater in magnitude than the gains experienced from spreads tightening.



We hope this brief review of historical trends in attribution has been useful. If you have additional comments or observations on this analysis, we'd like to hear from you – please send your comments to Teri Geske via email at [teri.geske@interactivedata.com](mailto:teri.geske@interactivedata.com). If you would like to replicate the graphs shown in this article, you can obtain all of the necessary data by exporting the Return History reports in Factors-based PART – please contact the CMS BondEdge Client Services Group at 800-228-9715 if you would like assistance. We continue to upgrade the methodologies and reporting tools we offer in both our Factors-based and Returns-based Performance Attribution analyses and appreciate your comments and feedback on this subject.

<sup>1</sup> The actual correlation between price change due to interest rates shifts and price change due to spread movements based on these 32 quarterly observations is -0.81 for the Aggregate and -0.72 for the All Credit index.

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## Valuing a Credit Default Swap

In BondEdge version 5.40 (now available in pre-release), we introduced a new Credit Default Swap model<sup>1</sup>. This model allows clients to create single-name credit default swaps (CDS) and to integrate them into portfolio analyses, including exposure aggregations, simulations and performance attribution. The model also values a CDS position, given the details of the contract and market information about the default swap premium currently demanded for buying or selling protection on the particular reference entity. In this article, we describe how to determine the current market value of a credit default swap.<sup>2</sup>

It is straightforward to see that the value of a CDS position must be related to the probability that the reference entity will default. Six years ago, when the CDS market was still in its early stages, Hull & White described how to derive default probabilities from bond prices, from a Structural model of default risk (also known as a Merton model), or from CDS spreads.<sup>3</sup> Over time, a fairly standard approach to valuing CDS positions based on default probabilities derived from current CDS spreads has evolved; this is the approach used in BondEdge.

When a CDS is negotiated, the periodic payment made by the protection buyer to the protection seller, called the CDS premium or simply the "deal spread", is set at the level that will make the value of the contract equal to zero. Intuitively, this means that the present value of the future premiums to be paid (the "premium leg") is equal to the present value of the expected payout, i.e., the payout that would occur in the event of default (the "protection leg"). The expected payout is determined by the notional amount of protection being sold, the probability of default and the amount that would be lost in the event of default, the "loss given default", which is alternatively shown as  $(1 - \text{Recovery Rate})$ , or  $[(\text{notional} \times \text{default probability} \times (1 - \text{recovery rate}))]$ . Since at the moment of creation the CDS contract's value is zero, neither the protection buyer nor the protection seller enter into the contract in a "disadvantaged" way.

From this, we can consider how the value of a CDS moves away from zero after the creation date. For example, assume a CDS contract allowed the protection buyer to pay 75 bps/year for protection against the risk that XYZ Corporation will default over the next 5 years. Shortly thereafter, the market sentiment about XYZ Corporation shifted and buying protection would cost 85 bps/year. It is fairly intuitive to see that the protection buyer has a gain and the seller a loss, on that contract, as the protection buyer only has to pay 75 bps for something that now costs 85 bps. Also, over time, the value of a CDS position will change due to the aging of the contract – for example, if it costs 75 bps/year for a 5-year contract, and 70 bps/year for a 4-year contract, the "aging" of the contract will cause the market value to be non-zero.

Mathematically, valuing a CDS contract can be done with the following formula:

$$\text{Mkt Value} = \left[ s_0 \sum_{i=1}^N DF_i \times PND_i \times A_i + s_0 \sum_{i=1}^N DF_i \times (PND_{i-1} - PND_i) \times \frac{A_i}{2} \right] - \left[ (1 - R) \sum_{i=1}^N DF_i \times (PND_{i-1} - PND_i) \right]$$

where,

$s_0$  is the deal spread established at the beginning of the CDS contract

$DF_i$  is the periodic discount factor derived from the risk-free term structure of interest rates

$PND_i$  is the probability of no default at time  $i$

$A_i$  is the accrual period

$R$  is the Recovery rate in the event of default

The term in the first set of brackets represents the "premium leg", which is the sum of the present values of the future premiums to be paid if no default occurs (the second term inside the premium leg side shows the premium that would be paid if a default occurred mid-way through the accrual period). The term in the second set of brackets is the protection leg, the present value of the amount paid in the event of default  $(1 - \text{Recovery})$ , multiplied by the probability of default. Note that the probability of default used in the calculation can change with each accrual period. Subtracting the protection leg from the premium leg gives us the current market value.

How is the CDS spread at any point in time determined? From the discussion above, we note that the value of the contract is zero at inception, i.e., the present value of the premium leg is equal to the present value of the protection leg, so when the contract is created the protection buyer and seller must agree on the expected loss, which itself is a function of the probability of default and the loss given default. So, the CDS spread is the periodic payment (in bps) that the protection buyer and seller agree is fair compensation for the risk of loss given default at the time the contract is created. The CDS spread quoted for a reference entity at any given moment reflects the current view on the default risk (and the assumed recovery rate in the event of default) of that entity – it is the spread that would make a new CDS contract trade “at par” and is therefore often referred to as the Par CDS rate. Therefore, credit default swap spread quotes are indications of the market's view on the default probability for a given obligor. The more likely a default is perceived to be, the higher the credit default swap spread, and vice versa. Since the market quotes default swap spreads, not default probabilities, we use the current market spreads to derive implied default probabilities (again, assuming some recovery rate).<sup>4</sup> Based on the derived implied default probabilities we can compute the current present value (price) of the CDS using the formula shown above.

The CDS model in BondEdge allows you to specify the current market spreads for the reference entity, either in the form of a complete default spread curve (that implies varying probabilities of default over time), or a single spread which is then applied across the remaining maturity of the CDS.

*If you have any questions about the CDS Model in BondEdge, please contact your CMS BondEdge Representative.*

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<sup>1</sup> See the article in the Q3 2005 issue of the CMS BondEdge newsletter, “On the Edge”.

<sup>2</sup> For more details on the mechanics of CDS, see the Back to Basics article dated May 2003, available on the BondEdge Private Client Site or at [www.bondedge.com](http://www.bondedge.com).

<sup>3</sup> Valuing Credit Default Swaps I: No Counterparty Default Risk, Journal of Derivatives, Fall 2000.

<sup>4</sup> If we change the recovery rate and hold the CDS spread constant, the implied default probability would change. For example, if the recovery rate decreased but the market-quoted CDS spread remained the same, implicitly the market is saying that the probability of default has declined, and vice versa.

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## BondEdge News

### **BondEdge Version 5.40 - Now Available!**

*Version 5.40 is now available for clients who wish to start using the new features in this release, or wish to test the new version:*

**Fitch Qualities/User-Defined Ratings** – With this release, we have added Fitch ratings to the BondEdge database for corporate bonds (Fitch ratings for Municipals are coming in version 5.50). We have also given clients the ability to create a user-defined quality rating scheme and to incorporate those ratings in BondEdge reports and in computing a portfolio's Average Quality. In reports where two ratings are shown side-by-side, you'll be able to specify which ratings types you want to include (Fitch, Moody's, S&P or User-defined).

**Database of Inflation-Linked Securities** – We have added a database of inflation-linked securities, including U.S. Treasuries (TIPS), non-US sovereign linkers, (including OATi's, OATei's and most UK linkers), and some corporate linkers. Note that the new UK gilt linkers that use a 3-month lag to compute the inflation-adjusted values will be added in version 5.50.

**Credit Default Swap Model** – We have added a single-name Credit Default Swap (CDS) model that allows clients to incorporate these instruments into their portfolios. The model computes the values of these instruments based on the deal spread and the issuer's current par CDS curve, and CDS positions are

included in BondEdge reports, portfolio simulations and analyses, including performance attribution.

**"Duration Beta" for Muni/Taxable Portfolios** – With this feature, clients can compute a duration for portfolios containing both taxable and tax-exempt portfolios that reflects the relationship between the muni yield curve and the taxable (Treasury) yield curve. In such a "blended" portfolio, the duration of tax-exempt securities can be adjusted by a user-defined beta to "dampen" the duration of the munis relative to the taxables, since changes in the Treasury yield curve are typically larger than the related shifts in Municipal yields. Alternatively, clients can "gross up" the duration of the taxable securities by the reciprocal of the beta.

**Controlling Clean-up Calls for ABS & CMO Deals** – In version 5.40, clients have the choice to activate or de-activate the clean-up call for ABS and CMOs on a deal-specific basis. The effective duration, average life, yield, and modified duration reflect the shortening of the cash flow profile if the clean-up call is in effect.

**New Fixed Rate MBS Prepayment Model** – Version 5.4 introduces a new prepayment model for fixed-rate MBS that incorporates collateral-specific data, such as Loan-to-Value, Spread at Origination and other characteristics, that affect prepayment behavior. *For more information, read our new white paper, "The Impact of Additional Loan Level and Market Data on the CMS BondEdge Fixed-Rate Prepayment Model", available by request from <http://www.interactivedata-fia.com/whitepapers/login.asp>. Clients may access the paper via the BondEdge Private Client Site.*

**Interest-Only MBS Pools** – We have enhanced our pool-specific mortgage cashflow generating routines to accommodate fixed- and adjustable-rate pools with an Interest-Only (IO) period, during which there is no scheduled repayment of principal. These pool-specific mortgages are accessible via the BondEdge Extended Database for clients using version 5.40.

**New Data for Distressed/Defaulted Bonds** – Clients who hold distressed debt in their portfolios can now stop the accrual of interest (we will do so automatically in the event of default, except for technical defaults) and can designate recovery rate and recovery date assumptions for computing yield and generating the cashflows used in cashflow analyses, attribution and simulations.

**Indices Data for Returns-Based Attribution** – In version 5.41, the follow-up release to the 5.40 pre-release, we are providing the index data needed to construct Returns-based Attribution analyses. Because the Returns-based Performance Attribution framework allows clients the flexibility to define their own return categories, the index data is aggregated on-the-fly, from security-level detail, according to each client's report definitions.

*Please contact your CMS BondEdge Representative if you would like access to version 5.40.*

**BondEdge Version 5.50**  
**Targeted release: October 2006**

*Work is well underway on version 5.50, due out in October of 2006. Here is a preview of the enhancements planned for that release:*

- TBA CUSIPs will be added to the CMS BondEdge database, with the ability to capture Dollar Roll strategies
- An enhanced Specified Scenario simulation will be introduced, along with a completely revised Probability Weighted Return simulation in the Compare module, including the ability to input corporate spread changes at the industry (secondary sector) level
- New features for municipal portfolio managers will be added, including more descriptive data items, an expanded Contribution-to-Duration report showing muni type (e.g., GO, REV, Insured, Pre-Refunded, ETM), and revised muni sectors that will be consistent with the sectors used by the major muni index providers
- We will release a revised prepayment model for Home Equity Loan deals
- The Factors-based Performance Attribution (PART) system will permit custom-weighted indices to be included in your analyses
- We'll provide a way to incorporate a portfolio as a separate holding into another portfolio, e.g. for

clients who hold mutual funds or ETFs within a portfolio, or who wish to create a replicating strategy involving two or more securities within another portfolio

### **BondEdge Version 5.30 - Reminder of Features**

*Although we're busy working on future releases, you may not have had an opportunity to explore all of the new features in the current general release, version 5.3x. Here's a reminder of some highlights of that release:*

- Policy Report Enhancements
- Returns-based Performance Attribution
- Transactions incorporated into Returns- and Factors-based Performance Attribution
- New Printed Report Formats
- MBS Collateral Information on the BondEdge Private Client Website
- Amortizing Floating Rate Securities Model
- Dynamic, Index-based Secondary Sector Lists
- Prepayment Models and Generic CUSIPs for 10- & 20-Year MBS Collateral
- Performance Measurement by Sector for Portfolios vs. the Merrill High Yield Index
- More Automation - Portfolio Imports, Data Updates from a Command Line.

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## **CMS BondEdge Structured Finance Cashflow Library Integrated with Milliman's MG-ALFA®**

Many of our clients use the BondEdge Cashflow Testing module to export files of scenario-driven security cashflows for use in other applications, such as asset-liability analysis systems. In response to regulatory demand for greater numbers of scenarios as well as regulatory direction that asset and liability modeling should be tightly integrated, we have undertaken to embed the BondEdge analytics routines with other asset liability products. Given the large number of scenarios generated (often a hundred or a thousand more), there is an operational risk of a mismatch in scenarios when combining the output for the assets from BondEdge with the liabilities as generated by another system. A preferred solution would enable the other application to invoke the BondEdge cashflow engine directly, generating and accessing cashflows "on the fly" as needed. The output from BondEdge could then be employed in the other system without the burden of making and transferring text files between the applications. Motivated by a mutual client in the insurance industry, we are currently working with the consulting and actuarial firm, Milliman, to accomplish just this by integrating the CMS BondEdge Structured Finance Cashflow Library with Milliman's MG-ALFA® system. Using the integrated BondEdge/MG-ALFA solution, our mutual client will be able to generate and retrieve scenario dependent cashflows produced by the BondEdge Cashflow Testing module from within the MG-ALFA system, for any of the 11,000 active CMO/ABS/CMBS deals modeled by CMS BondEdge.

Technically, the integration is being accomplished as follows. CMS BondEdge has created a DLL (Dynamically Linked Library) that makes available certain of the BondEdge Cashflow Testing module's features as callable functions that can be invoked from another application. For their part, Milliman has built a corresponding interface into their MG-ALFA system to call the functions in the Cashflow Testing DLL, and thereby generate cashflows as needed from within an asset-liability analysis. By calling the DLL functions, MG-ALFA provides interest rate scenarios and security identifiers, and retrieves time series of cashflows and remaining balances generated using BondEdge prepayment models and tranche distribution rules.

Because the DLL is built from the BondEdge source code, it is technically feasible for any BondEdge calculation or analysis to be made available in a similar way via this or another DLL. Furthermore, because the DLL reads the BondEdge databases there is no incremental data maintenance required on the part of a BondEdge client to support the use of the DLL by the other application. Based on what we have learned from the experience of working with Milliman to offer an integrated analytical solution to a joint client, we anticipate pursuing similar ventures with other third party software vendors or BondEdge clients with specialized needs.

*If you are interested in learning more about how your firm could benefit from the CMS BondEdge/MG-ALFA integration or if you are interested in a CMS BondEdge integration with your asset/liability vendor, please contact your CMS BondEdge Representative.*

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## Grid-Enabling BondEdge

BondEdge and its associated databases rely on a number of computationally intensive processes that we are always working to make more efficient. We recognize that operational efficiencies are of critical importance to achieving the goal of updating, analyzing and reporting on a daily basis. The traditional solution to obtaining faster run times for a software application is to host it on a faster, more capable machine, perhaps one dedicated to that single application. Another approach is to install the application on multiple computers, and manually allocate portions of large processing tasks across those machines. These approaches can be effective in the sense of accomplishing business-critical processing tasks within required production timeframes, but they are rarely efficient in their use of staff resources and capital expenditures on equipment. Investing in dedicated machinery invariably results in overbuying, as the purchase decision is driven by the need to meet peak computing demands rather than average processing loads.

A different approach now gaining momentum in the financial industry is to run large applications on a so-called computing grid. Several vendors in this space, including DataSynapse, Platform Computing and others, license software that knits together standard personal computers, workstations and servers into an apparently single computing resource capable of processing portions of large jobs in parallel. These vendors' grid software products include management agents for assigning and collating tasks among calculation agents, control mechanisms for setting service priorities among applications, and APIs (application programming interfaces) that an application such as BondEdge can use to employ the grid computing resources. We are experimenting at CMS BondEdge with grid-enabling portions of BondEdge, with the goal of making certain calculation-intensive functions in the system run considerably faster.

The grid computing concept can be highly cost-efficient, as it enables a very powerful computing facility to be assembled from underutilized, standard computers. It is also robust, as failures of single computers in the grid will simply result in those machines being decommissioned by the grid management agents, preserving the integrity of the grid. And the ability to designate relative priorities, processing timeframes and the like among software applications ensures that required service levels for production jobs can be reliably met.

While these advantages are compelling, grid-enabling a large and complex software application such as BondEdge is a significant task, involving a substantial programming effort. Furthermore, enabling BondEdge to run on grids from different grid software vendors will involve separate efforts on our part. Nevertheless, we are enthusiastic about the benefits to our clients of dramatically reducing the amount of time needed for completing computationally intensive functions in BondEdge such as the Dynamic Asset Cashflow Testing system that our insurance and banking clients use to forecast portfolio cashflows under hundreds, or even thousands of stochastic interest rate scenarios.

Cashflow Testing is a natural candidate for grid processing, as individual holdings can be processed concurrently by different grid calculation agents, and the results then reunited and aggregated for display. Accordingly, we are doing programming work in the Cashflow Testing module to assemble and submit to the grid individual processing tasks, each consisting of the security data and scenario information needed to calculate a single holding's cashflows and associated measures. Another area of research for us is the possibility of using grid processing to manufacture our CMO database, as that effort entails extremely time-consuming calculations.

Initial results of this experimental work have been encouraging, with a multiple of processing throughput being accomplished while running the Cashflow Testing module on a small computing grid here at CMS BondEdge. We will keep you informed as our work progresses, and in the meantime would be highly interested in learning from our clients about the existence or plans for computing grids in your organizations – if you are already using grid processing in some part of your organization, we would like to know which

vendor your firm has selected for its grid processing efforts. We expect that use of computing grids will become fairly widespread over the next few years, and we anticipate grid-enabling an increasing number of BondEdge functions based on client feedback.

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**Q. We have recently completed our AM Reports. How does BondEdge calculate the various sensitivity measures?**

**A.** BondEdge uses the Parallel Simulation to derive the appropriate calculations. Listed below are the type of simulation and the inputs used:

Book Yield	Book Value Parallel Simulation Report, 1 month, Aged
YTM	Market Value Parallel Simulation Report, 0 month, Instanteous
Average Life	Market Value Parallel Simulation Report, 0 month, Aged
Effective Dur	Market Value Parallel Simulation Report, 0 month, Instanteous
Gain/Loss	Book Value Parallel Simulation Report, 0 month, Instanteous
Convexity	Market Value Parallel Simulation Report, 0 month, Instanteous

*For further information on Simulations in BondEdge please see the "How to Interpret Market Value Parallel and Specified Scenario Simulations" in the help screen or contact the Client Services Group.*

**Q. Are there any new utilities available to translate delimited files into BondEdge Import format?**

**A.** Yes. Portfolio.exe is a Windows®-based translation utility that can be customized by the user to suit their individual needs. The user can specify which fields out of their file they wish to use as well as the order of the fields and the type of delimiter being. Portfolio.exe can also automatically add portfolio names and account for files with multiple lines of header information. As with the existing utilities such as CSV2BE, Portfolio.exe also includes cusip, sector, portfolio reference files, which will convert customized identifiers, external sector codes and portfolio names. Once the Portfolio.exe has been configured each import requires only the import and export file names and paths to create a customized BondEdge import file.

*Contact the Client Services Group if you would like to know more about how to use this new utility!*

**Q. I periodically see rounding differences when comparing the Market Value reports to other externally produced reports (e.g., accounting system).**

**A.** BondEdge version 5.3x allows you to import values in actual dollars, rather than in thousands, and BondEdge will retain this precision when computing market values, book values, accrued interest etc. The par values will still be displayed as 000's on CMS BondEdge standard reports but internally the actual dollar values will be used. The Portfolio Editor and What-If Editor screens have also been modified so that you can choose to input Actual \$'s or \$000's.

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