



Quarter 3, 2006, Volume 21, No. 3

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- BondEdge News: Review & Preview of Current & Upcoming Releases
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## 2006 CMS BondEdge Annual Fixed Income Workshops

CMS BondEdge, an Interactive Data division, hosted a highly successful series of fixed income workshops this year in San Francisco, New York, and Chicago. The workshops were attended by nearly 400 fixed income professionals from the asset management, insurance, banking, pension fund, and broker-dealer industries, indicating strong interest in the many new topics covered this year.

Session topics addressed updates in Performance Attribution and Indexation techniques, including the new Returns-based Attribution methodology. The session covering the new CMS BondEdge Fixed-rate Prepayment model was extremely well attended, as were sessions covering a wide range of fixed income topics, such as BondEdge & Municipal Markets, Key Rate Durations: Observations & Oddities, and Understanding Credit Derivatives. As always, the Hands-on Training Sessions were very popular.

“**Good conference.** First time attendee and I felt it was an **effective use of time.**”

“**Good overview** and discussion of **pertinent topics. Very valuable info!**”

“**Very informative** overall — liked the **relaxed atmosphere** and ample time for Q&A during each presentation.”

“**Very well organized. Great speakers.** Great space. Great food.”

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## 2nd Quarter 2006 Fixed Income Markets Review: *Market Flash*

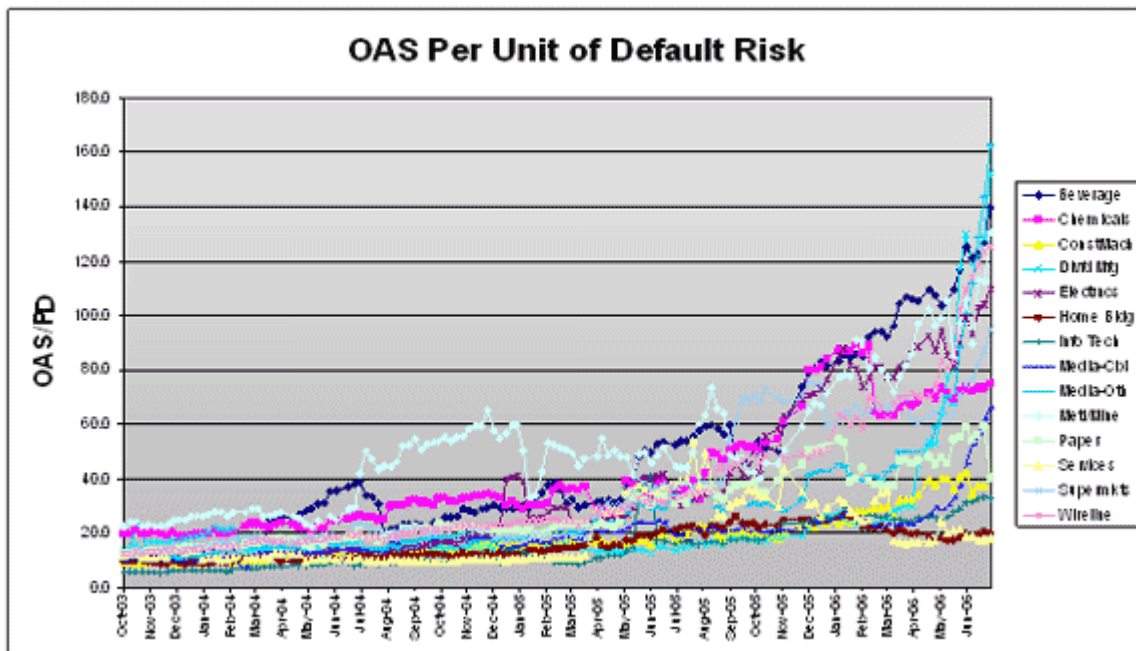
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### Default Probabilities & OAS: Recent Trends

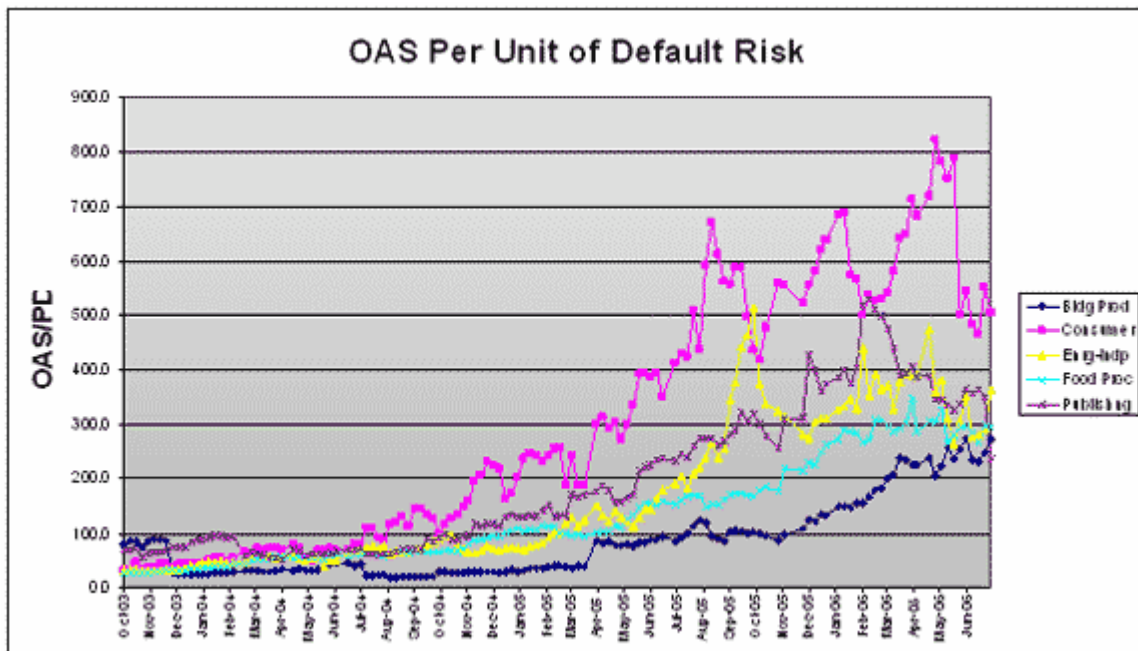
Over the past few years, as credit risk modeling and credit derivatives have become commonly used tools in fixed income markets, there has been much discussion and analysis of the relationship between a corporate bond's option-adjusted spread (OAS) and the observed credit default swap (CDS) premium investors would pay (receive) for buying (selling) protection against a default by the bond's issuer. The theoretical argument holds that CDS premiums and OAS's should be quite similar in magnitude because a portfolio consisting of a corporate bond and a long position in a CDS on the issuer (i.e., buying protection) is essentially the same as a position in a credit risk-free instrument of the same maturity. Thus, the cost of the protection (the CDS premium) should offset the incremental spread earned from investing in the credit-risky asset. There are a number of reasons why, in practice, the relationship between OAS's and CDS premiums does not strictly adhere to this theoretical argument (and at times can diverge significantly). Nonetheless, there is a solid basis for the argument that default risk and OAS should be related. In this article, we examine some empirical evidence on this subject and observe some trends in the data over the past 2½+ years.

Since October 2003, we have been tracking default probabilities for a subset of U.S. corporate bond issuers from the RiskMetrics Group's CreditGrades™ model, aggregated by industry<sup>1</sup>; We separated the investment grade and non-investment grade issuers into separate populations – this article deals exclusively with investment grade issuers. We have also been tracking the average OAS's for the same issuers, as derived by the analytical models in BondEdge, based on prices supplied by our sister company, FT Interactive Data. The data allows us to observe the relationship between OAS's from the cash bond market, and the probability of default as determined by the structural default model framework (note that, since the CreditGrades default probabilities are computed from a structural model, this analysis does not address the question of how closely bond OAS's are related to credit default swap premiums).



We measure the relationship between OAS and default risk rather simplistically, by dividing the probability of default (PD) into the OAS to give us the OAS (in bps) per unit of default risk. In other words, when the market demands a risk premium for holding a corporate bond versus a default risk-free Treasury, what is the ratio of that premium to the perceived default risk of the issuer? We acknowledge that this measure is not ideal – for example, we would prefer to work with an OAS value that excludes the liquidity premium that is generally acknowledged to be included in a corporate bond's OAS but have no clear way of defining the size of that liquidity premium, or whether it is stable through time. Even if we could extract the liquidity premium from the OAS, it is entirely likely that that the relationship between the resulting credit-driven OAS and default risk is not linear. Nonetheless, the simple ratio is straightforward and can readily be measured over time. In the chart above, we can see that there is a fairly consistent relationship between OAS and default probability across the fourteen industries shown. With a few exceptions, the OAS/PD ratios are clustered together rather tightly from October 2003, until about April 2005, at which time they begin to disperse. While it is beyond the scope of this brief article to analyze the reasons for this dispersion, it is worth noting that the increase in the OAS/PD ratio that occurred for many of the industries appears to have come primarily from a gradual increase in the OAS from April 2005, rather than a decrease in the probability of default (although in some cases, both did occur).

We also had an unusual finding for certain industries, as shown below:



While the OAS/PD ratios across these five industries also became increasingly dispersed around April 2005, the absolute values of the OAS/PD ratio are much higher across the board than in the first graph. Why would the bonds issued by these industries offer a much higher OAS per unit of default risk than for other industries? We tried to eliminate the industries that were heavily skewed by a single issuer (such as Airlines, as there is only one issuer in the investment grade population), or those where the population of issuers in the category changed notably, such as the Auto sector which contained Ford and GM until they were downgraded to non-investment grade status. On the surface, it appears that investors are being more highly compensated for the risk of holding debt from these industries than for most other industries. In a future article, we'll use the data on the BondEdge Private Client Website to look at some of the specific issuers within these industries to see if we can figure out what's behind these trends.

*If you have any thoughts on this topic, we'd like to hear from you! Please contact Teri Geske at [teri.geske@interactivedata.com](mailto:teri.geske@interactivedata.com) – we welcome your comments, questions and suggestions.*

<sup>1</sup> The CreditGrades model is a structural model of default risk, which means the probabilities of default produced by the model are a function of the amount of leverage in the firm, and the value and volatility of the firm's equity. For more information about structural

models, please see the Back-to-Basics article, The Basics of Credit Risk Modeling, available under the Research link on [www.cmsbondedge.com](http://www.cmsbondedge.com).

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## BondEdge News

### **BondEdge Version 5.4x - Now Available!**

*Version 5.4x is now in general release. As a reminder, clients must upgrade to version 5.42 or higher no later than August 31, 2006. Here is a reminder of the key features in 5.4x:*

**Fitch Qualities/User-Defined Ratings** – Fitch ratings are now included in the BondEdge database for corporate bonds (Fitch ratings for Municipals are coming in version 5.50). Clients can also create a user-defined quality rating scheme and can incorporate those ratings in BondEdge reports and in computing a portfolio's Average Quality. A new setting allows you to specify the primary and secondary rating types to be displayed in most BondEdge reports where one or two ratings are shown.

**Inflation-Linked Securities Data** – The BondEdge database now includes inflation-linked securities, including U.S. Treasuries (TIPS), non-U.S. sovereign linkers, (including the French OATi's, OATei's, UK linkers, and Canadian and Australian TIPS), as well as a number of corporate linkers, eliminating the need to create these securities manually. Note that recently issued 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** – A new single-name Credit Default Swap (CDS) model allows clients to create these instruments and incorporate them into portfolio analyses, including credit exposure reports, simulations and performance attribution. The new CDS model computes the values of these instruments based on the deal characteristics and original spread and the issuer's current par CDS curve.

**"Duration Beta" for Muni/Taxable Portfolios** – With this feature, clients can compute a muni-adjusted 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 user-defined betas to adjust the duration of the munis relative to the taxables. Alternatively, clients can use a beta reciprocal to "gross up" the duration of the taxable securities relative to tax-exempt munis.

**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 5.40 introduces a new prepayment model for fixed-rate MBS. The new model incorporates collateral-specific data, such as Loan-to-Value, Spread at Origination and other characteristics that affect prepayment behavior. As a reminder, these pool-level characteristics are viewable on the BondEdge Private Client Site. *For more information, read our 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.

**Data for Distressed/Defaulted Bonds** – The Corporate bond model has been modified to allow clients to

stop the accrual of interest (we will do so automatically in the event of default, except for technical defaults) and to designate recovery rate and recovery date assumptions for computing yield and generating the cashflows used for these securities in cashflow analyses, attribution and simulations.

**Indices Data for Returns-Based Attribution** – Indices Data for Returns-Based Attribution – The Returns-based Attribution model that explains performance in terms of weighting (allocations) and selection (bond-specific performance) versus a benchmark by user-selected categories now includes the constituent-level Index data needed to construct the analyses (previously, this feature was available for Portfolio A vs. B analyses only). The Returns-based Attribution framework allows clients the flexibility to define their own return categories for numeric values such as Maturity or Duration buckets, and to nest characteristics, e.g., Quality Ratings within Sectors, etc.

*We encourage you to upgrade to version 5.4x as soon as possible to allow you sufficient in-house review before the mandatory upgrade date of August 31, 2006. Please contact your CMS BondEdge Representative if you need assistance upgrading to version 5.4x.*

**BondEdge Version 5.50**  
**Targeted release: 4th quarter, 2006**

*Version 5.50 is scheduled for release in the 4th quarter of 2006. Here is a preview of the enhancements planned for that release:*

**TBAs & Dollar Rolls** – TBA Mortgage CUSIPs will be added to the BondEdge database, with the ability to capture Dollar Roll strategies by defining a portfolio-specific “earned reinvestment rate” associated with TBA positions.

**New Simulation Tools** – A greatly enhanced Specified Scenario simulation will be introduced, along with a completely revised Probability Weighted Return simulation in the Compare module for portfolio versus benchmark analyses. The two simulations will be made consistent, with both offering the ability to input corporate spread changes using a matrix of quality ratings and industries and/or issuers. So, for example, you will be able to simulate the impact of a change in interest rates (curve flattening, steepening, etc.), along with widening of corporate spreads on all but the highest quality bonds, with a more pronounced widening in selected industries, while specifying exceptions to these trends for particular issuers. You can also incorporate changes to the Muni yield curve and separately specify changes to credit spreads for munis at the GO, Revenue, Pre-Refunded, ETM and Insured levels.

**Adjustable Rate Home Equity Loan Prepay Model** – We will release a new prepayment model for Adjustable Rate Home Equity Loan deals.

**Muni Features** – We're adding more features for Municipal portfolio managers to BondEdge, including more descriptive data items, an expanded Contribution-to-Duration report showing muni type (e.g., GO, REV, Insured, Pre-refunded, ETM), revised muni sectors that will be consistent with the sectors used by the major muni index providers and more muni features in the custom Report Writer. We'll also show bonds that have been recently pre-refunded in the Portfolio Alerts report.

**Attribution with Custom-weighted Indices** – You will be able to use custom-blended indices (e.g., 30% of Index 1, 50% of Index 2, 20% of Index 3) in Factors-based Performance Attribution analyses.

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## Performance Attribution for Municipal Portfolios

Performance attribution is becoming increasingly important to managers of municipal bond portfolios. There are a number of challenges to attribution in the municipal arena: municipal securities are categorized by

multiple characteristics (such as State, Purpose, Insured status, etc.), benchmark indices typically contain tens of thousands of securities, portfolios may include both taxable and tax-exempt securities, etc. The Returns-based Performance Attribution system in BondEdge offers an intuitive, user-friendly approach to municipal portfolio attribution that allows managers to demonstrate the impact of portfolio allocation decisions on relative returns, according to the dimensions that mirror the investment management process. This article uses a hypothetical portfolio to illustrate the approach.

In this analysis, the total return of a portfolio and benchmark are segregated among user-selected categories, such as State, Primary Purpose (G.O., Revenue, Pre-refunded, Insured or ETM), Maturity or Duration buckets, etc., and performance differences are then attributed to the portfolio manager's decision to under- or overweight those categories, and to the manager's selection of under- or outperforming securities relative to the benchmark within each category. The returns for the portfolio and the benchmark are segregated bond-by-bond into the chosen categories; therefore, the analysis requires the use of constituent-level information for the benchmark as well as the portfolio. This analysis is particularly useful for municipal portfolio managers serving high net worth individuals with balanced accounts, as it matches the type of attribution typically done for equity portfolios. It also circumvents certain challenges encountered when applying a Factors-based style of performance attribution to the municipal market, such as "what is the benchmark yield curve?" and "what sector definitions are used to determine sector spread movements?"

The following example examines a hypothetical municipal portfolio benchmarked against the Merrill Lynch Muni 1-10 Year Index. It is a multi-state portfolio, and the manager's primary decision is the allocation between G.O., Revenue and Pre-refunded bonds. Within those broad categories, the manager determines the desired term structure exposure using duration ranges as shown below. The analysis shows that April was a cruel month for this portfolio manager, as his (or her) portfolio underperformed the benchmark by almost 30 bps. The question is now, was this due to over- or under-weightings among the various types of munis, or was it due to the manager's unfortunate bond selections within the categories?

At the top of the report, under the columns labeled "Analytics: Weighting and Selection", we can see that the manager's underperformance was due almost entirely to poor selection – in other words, the manager did not under-weight an outperforming primary category, or overweight a primary category that underperformed the overall index in any meaningful way. For example, the manager allocated 51.78% of the portfolio to Revenue bonds, compared to the index's allocation of 50.67%. The return for Revenue bonds in the index was 0.151, compared to the overall index return of 0.148, so Revenue bonds slightly outperformed (by less than 2 bps) and the manager slightly over-weighted the category. This favorable weighting decision, however, was entirely overwhelmed by the poor performance of the bonds in the Revenue category, particularly in the 5.0 – 9.9 year duration bucket (these duration buckets are user-defined in the Attribution system). The portfolio's holdings in this category had a weighted average return of almost -18 bps, while the average return for the same category in the index was +6 bps, and, the manager chose to invest almost half of the portfolio's Revenue bonds in this duration bucket.

Portfolio: MUNI FUND  
 Benchmark: USAX  
 Base Currency: USD

Beginning Date: 03/31/06  
 Ending Date: 04/28/06

Sect-Def   Eff Dur	-----Analytics-----		-----Portfolio-----			-----Benchmark-----			-----Difference-----		
	Weighting	Selection	Return	Cont Ret	% MV	Return	Cont Ret	% MV	Return	Cont Ret	% MV
Total	-0.000722	-0.298459	-0.151	-0.1513	100.00	0.148	0.1479	100.00	-0.299	-0.2992	0.00
MUNICIPAL	0.000000	-0.298215	-0.151	-0.1512	100.00	0.148	0.1479	100.00	-0.300	-0.2989	-0.49
< 1.00	-0.001758	0.006015	0.912	0.0088	0.96	0.288	0.0064	2.22	0.624	0.0024	-1.25
1.00-2.99	-0.006480	0.001527	0.240	0.0053	2.20	0.170	0.0536	31.50	0.070	-0.0483	-29.30
3.00-4.99	-0.014313	-0.016731	0.080	0.0094	11.74	0.223	0.0688	30.89	-0.143	-0.0594	-19.15
5.00-9.99	-0.041188	-0.189852	-0.185	-0.1468	79.36	0.054	0.0192	35.40	-0.239	-0.1660	43.97
10.00+	-0.007769	-0.027673	-0.527	-0.0277	5.25	0.000	0.0000	0.00	-0.527	-0.0277	5.25
ETM	-0.000067	-0.010428	-0.042	-0.0028	6.75	0.113	0.0074	6.55	-0.155	-0.0102	0.20
< 1.00	0.000073	0.000000	0.000	0.0000	0.00	0.064	0.0001	0.15	-0.064	-0.0001	-0.15
1.00-2.99	-0.001266	0.000025	0.188	0.0002	0.08	0.158	0.0046	2.90	0.030	-0.0044	-2.82
3.00-4.99	-0.001534	-0.000157	0.175	0.0009	0.53	0.205	0.0045	2.20	-0.030	-0.0036	-1.67
5.00-9.99	-0.012114	0.004538	-0.063	-0.0039	6.14	-0.137	-0.0018	1.30	0.074	-0.0021	4.84
10.00+	0.000000	0.000000	0.000	0.0000	0.00	0.000	0.0000	0.00	0.000	0.0000	0.00
GO	-0.000219	-0.137663	-0.233	-0.0320	35.12	0.158	0.0589	37.21	-0.392	-0.1410	-2.08
< 1.00	-0.000329	0.000019	0.242	0.0002	0.08	0.218	0.0014	0.63	0.023	-0.0012	-0.55
1.00-2.99	-0.002215	-0.000084	0.157	0.0006	0.39	0.178	0.0205	11.46	-0.022	-0.0198	-11.07
3.00-4.99	-0.006148	-0.008671	0.040	0.0017	4.29	0.242	0.0282	11.62	-0.202	-0.0264	-7.32
5.00-9.99	-0.012855	-0.086236	-0.248	-0.0680	27.47	0.066	0.0090	13.50	-0.314	-0.0770	13.97
10.00+	-0.004585	-0.016556	-0.572	-0.0166	2.89	0.000	0.0000	0.00	-0.572	-0.0166	2.89
PREF	-0.000380	0.004725	0.201	0.0118	5.87	0.121	0.0054	4.46	0.081	0.0064	1.89
< 1.00	0.000032	0.000139	0.239	0.0005	0.21	0.172	0.0003	0.14	0.067	0.0003	0.06
1.00-2.99	-0.000398	0.000046	0.163	0.0003	0.20	0.141	0.0031	2.21	0.023	-0.0028	-2.01
3.00-4.99	-0.000026	0.003791	0.277	0.0066	2.38	0.118	0.0017	1.48	0.160	0.0049	0.90
5.00-9.99	-0.001704	0.003640	0.171	0.0050	2.95	0.047	0.0003	0.63	0.124	0.0047	2.31
10.00+	-0.000154	-0.000644	-0.506	-0.0006	0.13	0.000	0.0000	0.00	-0.506	-0.0006	0.13
REV	0.000035	-0.156198	-0.151	-0.0780	51.78	0.151	0.0765	50.67	-0.302	-0.1545	1.12
< 1.00	-0.001075	0.005575	1.198	0.0081	0.68	0.374	0.0043	1.16	0.824	0.0038	-0.48
1.00-2.99	-0.002905	0.001528	0.274	0.0042	1.52	0.173	0.0253	14.61	0.100	-0.0211	-13.09
3.00-4.99	-0.008516	-0.040265	0.003	0.0001	4.54	0.232	0.0350	15.10	-0.228	-0.0348	-10.56
5.00-9.99	-0.020931	-0.105865	-0.167	-0.0799	42.81	0.060	0.0119	19.80	-0.247	-0.0918	23.02
10.00+	-0.003370	-0.010473	-0.469	-0.0105	2.23	0.000	0.0000	0.00	-0.469	-0.0105	2.23
Othr-MUNI	0.012400	-0.009800	-0.050	-0.0002	0.49	-0.030	-0.0003	1.11	-0.020	0.0001	-0.62
< 1.00	-0.000370	0.000000	0.000	0.0000	0.00	0.276	0.0003	0.12	-0.276	-0.0003	-0.12
1.00-2.99	-0.000209	0.000000	0.000	0.0000	0.00	0.036	0.0001	0.32	-0.036	-0.0001	-0.32
3.00-4.99	0.000453	0.000000	-0.050	-0.0002	0.49	-0.121	-0.0006	0.50	0.121	0.0006	-0.01
5.00-9.99	0.000125	0.000000	0.000	0.0000	0.00	-0.106	-0.0002	0.17	0.106	0.0002	-0.17
10.00+	0.000000	0.000000	0.000	0.0000	0.00	0.000	0.0000	0.00	0.000	0.0000	0.00

At this secondary level of analysis, (the duration allocation), the Weighting Effect is based on whether the portfolio was over- or under-weighted in the secondary category (the particular duration bucket) and the index's return for the secondary category compared to the return for the index within the *primary category*. So, the portfolio was substantially over-weighted in the 5.0 – 9.9 duration range (42.8% vs. 19.8% for the index) and the index return for bonds in the 5.0 – 9.9 was only 6 bps, versus 15.1 bps for Revenue bonds overall. Thus, the Weighting Effect for this category is negative. The Selection Effect is then determined by whether the portfolio's return within a duration bucket is greater or less than the benchmark's return within the same bucket.

Interpreting the results with a second layer in the analysis requires us to recognize that when attributing the return difference *within* the primary category (e.g., primary type or purpose) to the secondary categories below it (e.g., duration buckets), the decision to be in the primary category had already been made. Given that decision, the Selection Effect at the primary category level is both a function of the manager's ability to select *among* the categories at the second level (i.e., the weightings across the duration buckets), and his ability to select good or bad bonds *within* each of those categories. Since the analysis at the secondary level is essentially a further breakdown of the Selection Effect for the primary level, the values shown in the combined Weighting and Selection Effect columns at the secondary level sum to the total Selection Effect for the primary category.

The Returns-based Attribution system allows you to drill down into any cell to see the bonds within the selected category, for the portfolio or for the benchmark. So, we can easily see the individual returns that comprised this category. The following is a subset of the bonds, those with a total return worse than 0.50%

for the month:

Portfolio: **MUNI FUND** Beginning Date: 03/31/06  
 Cont Ret: **-0.37%** Ending Date: 04/28/06  
 Bucket: **30% Def MUNI-REV | Eff Dur 5.25-10.00** Basis Currency: USD

Beg Par (\$00)	End Par (\$00)	Issuer	Ticker	Coupon	Maturity	Beg Price	End Price	Total Return	Contrib Return	%Bkt Value	Holding Pct	Holding To
1,540	1,540	167954WZ	CHICAGO ILL PUB BLDG COMM	5.250	12/01/18	110.117	108.847	-0.750	-0.001	0.13	03/31/06	04/28/06
2,000	2,000	594692C7	MICHIGAN ST STRATEGIC F D L	7.000	09/01/21	128.294	126.797	-0.720	-0.002	0.20	03/31/06	04/28/06
750	750	197493BT	CO LUMBIA CNTY GA WTR AND S	6.000	09/01/20	117.646	116.311	-0.710	-0.001	0.07	03/31/06	04/28/06
5,000	5,000	67366VQU	OHIO ST WTR DEV AUTH WTR P	5.250	12/01/19	110.932	109.799	-0.640	-0.003	0.44	03/31/06	04/28/06
4,500	4,500	644531CZ	SO WTH EAST WIS PRO FESCO MAL	5.500	12/15/19	112.789	111.609	-0.620	-0.003	0.40	03/31/06	04/28/06
1,000	1,000	19629HCU	COLO RADO WTR RES AND PW R D	5.500	09/01/19	113.438	112.288	-0.620	-0.001	0.09	03/31/06	04/28/06
3,500	3,500	573879HC	MASSACHUSETTS BAY TRANS A	5.250	07/01/19	110.788	109.678	-0.620	-0.002	0.31	03/31/06	04/28/06
7,000	7,000	6461359C	NEW JERSEY ST TRANS TR F D	6.750	09/15/20	112.552	111.397	-0.610	-0.004	0.62	03/31/06	04/28/06
3,750	3,750	649864WV	NEW YORK ST ENVIRONMENTAL	5.500	10/15/19	112.630	112.469	-0.610	-0.002	0.34	03/31/06	04/28/06
5,360	5,360	673699QC	OHIO ST WTR DEV AUTH PEB/	5.500	09/01/19	113.140	112.011	-0.600	-0.003	0.48	03/31/06	04/28/06
655	655	60626PDR	MISSO URI ST ENVIRONMENTAL	5.250	01/01/19	110.688	109.605	-0.560	0.000	0.06	03/31/06	04/28/06
1,000	1,000	19629HCT	COLO RADO WTR RES AND PW R D	5.500	09/01/18	112.679	111.790	-0.560	-0.001	0.09	03/31/06	04/28/06
8,000	8,000	92817F4R	VIRGINIA ST PUB SCH AUTH	5.250	08/01/18	110.115	109.053	-0.570	-0.004	0.69	03/31/06	04/28/06
5,000	5,000	57404PFC	MASSACHUSETTS ST WTR POLLU	5.250	08/01/18	109.913	108.864	-0.570	-0.002	0.43	03/31/06	04/28/06
1,000	1,000	5947006F	MICHIGAN ST TRUNKLINE F D	5.250	11/01/18	112.908	111.814	-0.560	-0.001	0.09	03/31/06	04/28/06
1,615	1,615	64201685	NEW JERSEY ECONOMIC DEV AU	5.375	09/15/14	106.515	105.485	-0.560	-0.001	0.14	03/31/06	04/28/06

BondEdge also offers a "Factors-based" approach to attribution that quantifies the sources of return and return differences versus a benchmark according to the key factors of income, term structure movements, spread changes, currency moves and issuer-specific performance. Both the Factors-based and the Returns-based attribution analyses can offer important insights into the sources of return differences. Most core and core-plus managers rely heavily on the Factors-based approach for internal assessment of portfolio structuring decisions because it quantifies returns in terms that mirror the portfolio management process, but may also use the Returns-based approach in client reports and for presentations to the consulting community. The Returns-based attribution system is particularly well-suited to the needs of municipal bond portfolio managers. It offers flexibility in presenting performance according to the criteria by which the portfolio is managed, portfolios can be examined according to multiple dimensions, such as allocations by State, then by Bond Type (purpose) within each State, or vice versa, and the results are intuitive and easily explainable to clients and other stakeholders.

*If you would like more information about subscribing to the Returns-based Performance Attribution module in BondEdge, please contact your CMS BondEdge Representative.*

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## CMS BondEdge Now Offers Fixed Income Analytical Datafeed Service

Having long since served the front office with superior investment decision-making tools, CMS BondEdge now offers direct analytical datafeed services for those firms interested in populating a data warehouse, risk management, or other proprietary applications such as reporting packages. Many of the sophisticated analytics available via this service include risk measures that BondEdge clients have been accessing for years, including option-adjusted duration and convexity, option-adjusted spread (OAS), key rate durations, yield-to-worst, and average life. The datafeed delivery option, however, allows CMS BondEdge to offer the same high quality fixed income analytical risk measures to the middle and back office functions.

For firms that already subscribe to BondEdge, and are either currently or have an interest in populating a data warehouse, risk management, or other proprietary applications with fixed income risk measures, the CMS BondEdge analytical datafeed service provides the additional benefit of consistency across multiple applications. From a risk management perspective, this may be highly advantageous.

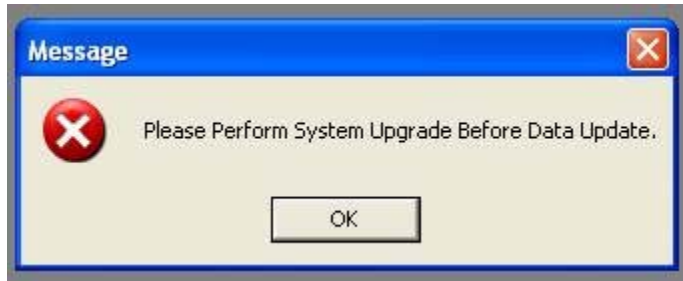
The CMS BondEdge fixed income analytical datafeed service is an "on demand" service delivered via the Internet. Risk measures offered are available based on any frequency, up to daily.

*For more information about this service, please contact your CMS BondEdge Representative.*

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## Month End Data Update Errors 101

Q.



A.

You are attempting to run a data update while not having the current version of BondEdge. Please contact CMS BondEdge for instructions on how to perform a system upgrade. If your version is current, please check the version line in the bondededge.ini file or contact CMS BondEdge for assistance.

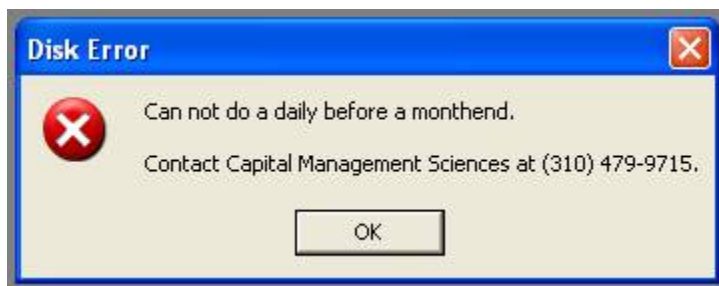
Q.



A.

You are attempting to run a month end update while another user is in BondEdge or a session has not closed completely. All other users must be logged off when running a month end update. This can also indicate that there is a problem with the .zip files that were downloaded from the CMS BondEdge Web servers.

Q.



A.

You are attempting to run a daily update before running the current month end update. For example, your database data is 02/28/06 and you're attempting to run a daily update for 04/15/06. You must run the 03/31/06 month end update before running the 04/15/06 daily update.

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