




## CMBS Collateral Analysis

A Bottom-Up, Loan-by-Loan Analysis for CMBS Investors

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## Overview

MSAnalytics provides investors with a comprehensive evaluation of the underlying loan collateral within commercial mortgage backed securities (CMBS) resulting in a projection of individual loan losses over the life of an investment. This gives CMBS investors a more transparent understanding of the cash flow waterfall available to the bondholder leading to better investment decisions.

In the past, investment grade CMBS investors relied on rating agency opinions, macroeconomic analysis and Constant Default Rate (CDR) analysis to assess the risk/return characteristics of CMBS. Below-investment-grade or “B-Piece” investors typically engaged in an extensive re-underwriting of the collateral at origination, which was both time consuming and expensive.

Investors now acknowledge that CMBS buy/sell/hold decisions requires significant collateral and credit analysis. Relying on rating agencies, macroeconomic or CDR analysis simply does not meet their needs and the B-Piece model is too costly.

Constructing an analytical tool that addresses the unique risk/return profile of each and every loan within a CMBS investment represents a significant challenge to many investors due to the cost, time and complexity of the task. Each bond, for example, can have more than 200 individual loans and may include several large and intricate loan portfolios. Evaluating a diversified portfolio of CMBS investments could involve an analysis of thousands of loans. The resources to conduct such an analysis on an investment portfolio, or even on a single trade, would consume significant time and capital.

MSAnalytics is a tool that evaluates the loans and the underlying collateral within CMBS in a cost effective and time efficient manner. MSAnalytics provides investors with greater transparency for their decision making process by utilizing a proprietary bottom-up, loan by loan, property by property methodology that is rooted in commercial real estate underwriting fundamentals. The result is a more granular understanding of the future cash flows available to bond investors.

MSAnalytics was developed by McCary Stevens and is based on its extensive experience in CMBS mortgage loan underwriting and due diligence as well as thousands of hours of research and development time. MSAnalytics can be a critical tool for CMBS investors to identify investments which achieve their overall CMBS investment strategies in a comprehensive, time sensitive and cost effective manner.

## MSAnalytics Process

McCary Stevens has aggregated and compiled publicly available critical loan information on hundreds of CMBS issues including the original Prospectus and its associated Annex A. Current loan and property level information is obtained using Trustee, Master and Special Servicer reporting packages. McCary Stevens consolidates and reviews all data for consistency and coherence. In addition, McCary Stevens regularly conducts its own primary research on commercial real estate markets. Critical loan and property information includes, but is not limited to:

<b>Loan Structure</b>	<b>Property/Market</b>	<b>Loan Performance</b>
Interest Rate	Location	Payment Status
Term	Property Type	Payment History
Payment Schedule	Occupancy Trends	Servicing Status
Reserves	Tenant Concentration	Servicing Commentary
Parri Passu	Tenant Rollover	
Split Loans	Current Cashflow	
Subordinate debt	Current Value	
Cross Collateralization	Demographics	

The critical loan information is evaluated in a proprietary MSAnalytics model that evaluates various characteristics of the property, property performance and loan criteria using a methodology developed from McCary Stevens' extensive due diligence, underwriting, and loan management experience. MSAnalytics produces a unique risk profile for every loan.

## MSAnalytics Results

The resulting risk profile for each loan includes:

**Probability of Default** – an assessment of the potential default for each loan during its term caused by a number of unique factors. Loans which have been defeased have a 0% Probability of Default while loans with a poor risk profile could be as high as 100%. The key factors in concluding a Probability of Default vary but often involve the following:

- Debt service coverage
- Current occupancy
- McCary Stevens’ underwriters’ market and property knowledge
- Payment status
- Current value
- Tenancy

**Loss Severity** - a projection of the potential loan loss based on specific valuation factors applied to the underlying real estate asset. The key factors in concluding a Loss Severity vary but often involve the following:

- Published loan loss studies
- Refinance sensitivity
- McCary Stevens’ underwriters’ market and property knowledge
- Property value
- Servicer Appraisal Reductions

**Date of Loss** - a determination is made on the projected timing of the Date of Loss for each loan based on a number of factors. The Date of Loss can be any time within the loan term or can extend out to the loan maturity date. The Date of Loss estimate is generally based on the following:

- Loan Maturity
- I/O to Amortizing Payment
- Tenant Rollover
- Debt service coverage
- Servicing Status
- Fully Defeased Loans

## MSAnalytics Expected Loan and Bond Losses

MSAnalytics produces an effective loss for each loan that can be uploaded into a CMBS bond pricing model for bond and cash flow waterfall analysis.

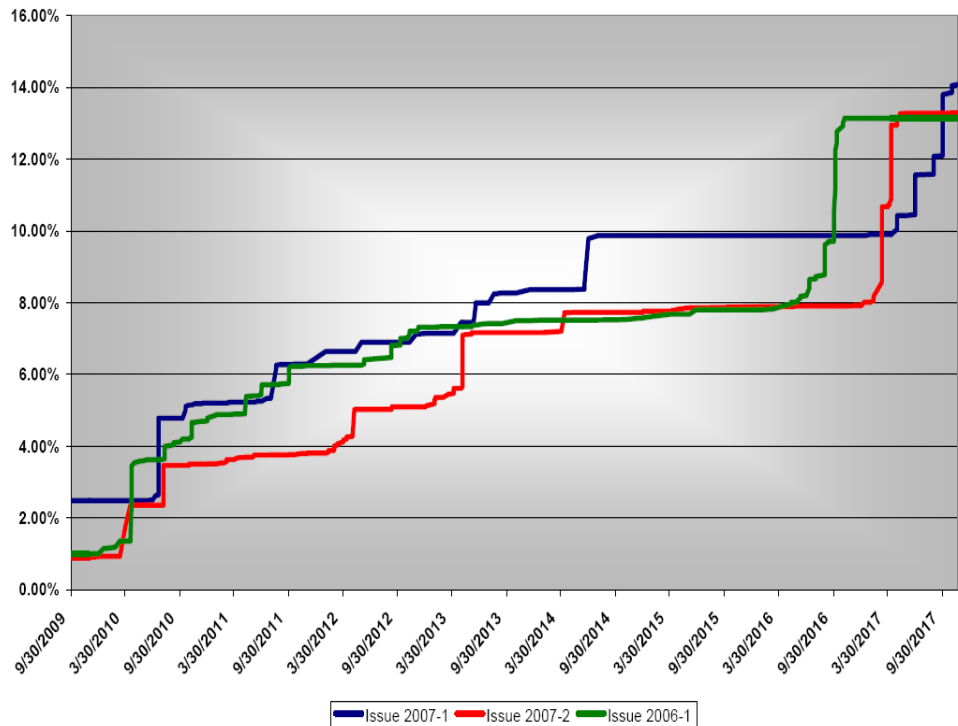
Sample Bond XXXX-2007-1

Loan ID	Property Name	City	State	Prop Type	Probability	Severity	Date	Loss	Balance
1	New York City Office Portfolio	New York	NY	Office	25%	29%	May-09	\$28,830,950	\$394,000,000
2	235 Washington Street	Washington	DC	Office	100%	35%	May-14	\$62,671,350	\$178,500,000
3	2345 East Front Street	Seattle	WA	Office	40%	29%	Oct-09	\$18,585,420	\$161,500,000
4	Bayview Apartments	Atlanta	GA	Apartment	35%	23%	Jul-05	\$10,939,950	\$138,000,000
5	Big Mall USA	Boston	MA	Retail	35%	20%	Apr-17	\$10,673,250	\$150,000,000
6	Boston Financial Center	Walpole	MA	Office	50%	10%	Jun-09	\$6,810,792	\$130,400,000
7	AB River Center	Washington	DC	Retail	35%	32%	May-17	\$12,739,125	\$115,000,000
8	3830 West 82nd Street	New York	NY	Office	80%	51%	Mar-17	\$37,212,448	\$91,000,000
9	Carson Ave	Boston	MA	Office	20%	65%	Aug-17	\$10,348,800	\$80,000,000
10	690 East 9th Street	St. Paul	MN	Office	25%	33%	Jan-09	\$6,332,700	\$76,000,000

## MSAnalytics Expected Loan and Bond Losses Over Time

MSAnalytics produces specific loss timing for each loan that can be rolled up into an expected loss timing schedule for an entire CMBS issue. When plotted on a graph, scheduled losses provide investors with a unique expected loss profile over the remaining term of the CMBS issue. The graph shows three different CMBS issues, one from 2006 and two from 2007, with their cumulative effective loan losses over time reflecting different risk profiles.

MSAnalytics - Cumulative Principal Loss Over Time



## **MSAnalytics Investor Report & Electronic Output**

The results of MSAnalytics are provided in a report summarizing the overall characteristics of the bond's underlying collateral and an Excel spreadsheet file which includes a probability of default, loss severity, and a projected timing of loss for each loan in the CMBS issue. Data can be uploaded from the Excel spreadsheet into various CMBS bond pricing platforms to help formulate appropriate loss adjusted pricing and valuation for various issues. The MSAnalytics electronic output can be customized to meet investor's specific needs.

## **Portfolio Analysis and Bond Pricing Advantage**

MSAnalytics provides investors with a critical tool to differentiate between CMBS issues and their individual tranches. MSAnalytics can quickly provide results on any number of selected CMBS issues allowing investors to analyze various issues, tranches and investment options that best meet their investment objectives.

Investors can use MSAnalytics to determine appropriate CMBS bond pricing when making buy / hold / sell investment decisions. It provides a unique measure of the potential risk/return profile for each investment.

## **Deeper Dive Due Diligence Services**

Investors can separately engage McCary Stevens to complete any number of additional services on selected loans or portfolio of loans to gain even more insight into the risk characteristics of the loan collateral. Additional services are tailored to a clients' needs and due diligence preferences. These services may include re-underwriting loans, market/broker surveillance calls, site inspections or other detailed investigations as appropriate.

## Company Background

Founded in 1993 and located in Hartford CT, McCary Stevens Associates, Inc. is a highly regarded commercial mortgage loan advisory service company providing a broad range of services to analyze and manage different types of real estate loans, loan portfolios and CMBS.

McCary Stevens avoids conflict of interest by providing independent loan advisory and analysis services to loan originators and CMBS bond investors on a fee for service basis only. All employees are senior real estate professionals with significant real estate and lending experience. McCary Stevens is an employee-owned, veteran-owned, qualified small business.

McCary Stevens brings a depth of experience rarely found in professional real estate loan advisory companies with a staff of 10 full time employees. Each staff member has between 18 and 30 years of real estate investment experience.

Over the past 15 years McCary Stevens has completed real estate loan advisory services on commercial, condominium, and residential land loans totaling more than \$50 billion. Our real estate advisory services work has taken us to every state and all primary and secondary metropolitan markets in the country. We have provided real estate lending advisory services to some of the largest financial institutions in the country including Wells Fargo Bank, Citigroup, ING-Clarion, CIBC, Midland Loan Services, Merrill Lynch, J.P. Morgan, RBS Greenwich Capital, Allied Capital, CIT and American Capital.

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