THE ROLE OF COMMERCIAL MORTGAGE BACKED SECURITIES (CMBS) IN A FIXED INCOME PORTFOLIO

EXECUTIVE SUMMARY

CMBS possess the following attributes, which make them attractive relative to alternative fixed income investments:

PERFORMANCE

- *CMBS have consistently outperformed the Lehman Aggregate Index and other fixed income sectors.*

  - Investment grade CMBS have outperformed the Lehman Aggregate by over 100, 90 and 80 basis points respectively during the last 1,3 and 5 year periods.

  - BBB CMBS have outperformed the Lehman Aggregate by 230, 350 and 120 basis points respectively during the last 1,3 and 5-year periods.

- *CMBS lack spread volatility relative to corporate bonds.* Based on the standard deviation of excess returns, the return per unit of risk for BBB CMBS and BBB corporate bonds is 2.82 and 1.84, respectively.

- *CMBS spreads offer a spread pick-up to corporate bonds.* The differential ranges from 3 to 144 basis points for BBB CMBS and BB CMBS respectively. While the BBB pick-up appears small on the surface, the advantage is clearer taking volatility of spreads into consideration as previously indicated.

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CREDIT

•*Reduced event risk due to loan diversification.* CMBS typically contain from 100 to 200 individual loans;

•*First mortgage liens securing the underlying loans.* CMBS investors possess the right to foreclose and sell the underlying property.

•*Credit enhancement through subordination of non-investment grade bonds.* Non-investment grade classes typically comprise the bottom 8%-10% of the transaction.

•*CMBS possess greater subordination than residential mortgage backed securities.* AAA subordination levels for CMBS are approximately 20% versus 4% for residential MBS.

•*The yield impact to CMBS stemming from defaults is minimal compared to corporate bonds.* Based on the historical incidence and severity of defaults in commercial mortgages and corporate bonds, the yield impact to CMBS is approximately 12.5 basis versus 30 basis points for corporate bonds.

•*CMBS upgrades outnumber downgrades.* Last year S&P reports that of the transactions they rate, CMBS experienced a record 174 upgrades and 62 downgrades. This has occurred during a time when high yield corporate defaults are at a ten-year high.

•*Commercial Real Estate markets remain on solid footing.*

➢National office vacancy rates as of December 2001 are 13.5% versus 18.6% at the start of the 1990 recession.

➢Trailing 12-month construction starts are 33% lower that at the start of the 1990 recession.

OTHER

- *CMBS are not highly correlated with alternative fixed income sectors.*
  - ➢ BBB CMBS and BBB corporate bonds have a correlation of .75;
  - ➢ High yield CMBS and high yield corporate bonds have a correlation of .28.
- *Investment grade CMBS possess same day liquidity,* with bid/ask spreads typically ranging from 3 to 7 basis points.
- *CMBS lack the convexity risk found in residential MBS,* due to strong call protection of the underlying loans.

INTRODUCTION

Since the early 90's, a dynamic market in commercial mortgage backed securities ("CMBS") has evolved in the United States, providing fixed income characteristics that compare favorably to corporate bonds and other fixed income products. Substantial liquidity has been created in the market for this asset class as cumulative issuance approached $400 billion as of year-end 2001, with annual issuance of between $50 and $70 billion.

Heretofore, CMBS, primarily rated AAA, have comprised a small portion of investor's fixed income portfolios. However, an excellent opportunity exists today to invest in lower rated CMBS at attractive spreads to U.S. Treasuries at a time when underlying real estate credit remains favorable relative to corporate bonds and alternative fixed income investments. In addition, CMBS credit and spreads have been relatively stable, while high yield corporate bond default rates have reached a ten-year high. As a result, previously held spread relationships between secured CMBS and unsecured corporate bonds have vanished. Recent history reflects the superior risk adjusted return potential for CMBS.

This paper will attempt to demonstrate that CMBS should have a material role in a fixed income portfolio. Due to the different fundamental, structural and credit characteristics that exist between CMBS and alternative fixed income investments, CMBS are not highly correlated with other asset classes. Therefore, CMBS can be put to work as both a hedge to other asset classes and provide superior risk adjusted returns in a fixed income portfolio.

THE YEAR 2001 IN REVIEW

Generally, CMBS market conditions are solid. Delinquencies are low in a historical context, and liquidity continues to increase, primarily due to a larger investor base. As was the case in the year 2000, in 2001, the fixed income markets incurred significant volatility. CMBS investments again ran counter to this condition as investors increasingly viewed CMBS as a core holding in their fixed income portfolios.

As is indicated in Figure 3, investment grade CMBS have outperformed the Lehman Aggregate Index, and high yield CMBS have outperformed high yield corporate bonds for five years running. This can be attributed to the excellent credit performance of CMBS, even during the recent economic downturn. Investors have recognized this and maintained a strong bid for CMBS, which has resulted in less spread volatility than that of corporate bonds. The out-performance can be attributed to the following:

- *Reduced Event Risk* – Pooling and diversification in the securitization process dilutes an investor's exposure to a particular credit event or any particular geographic region. A single CMBS transaction may be secured by 100 to 200 individual mortgages across the United States primarily on office, retail, industrial and multifamily properties. Furthermore, diversification of the tenant base in the underlying properties provides additional protection against event risk.

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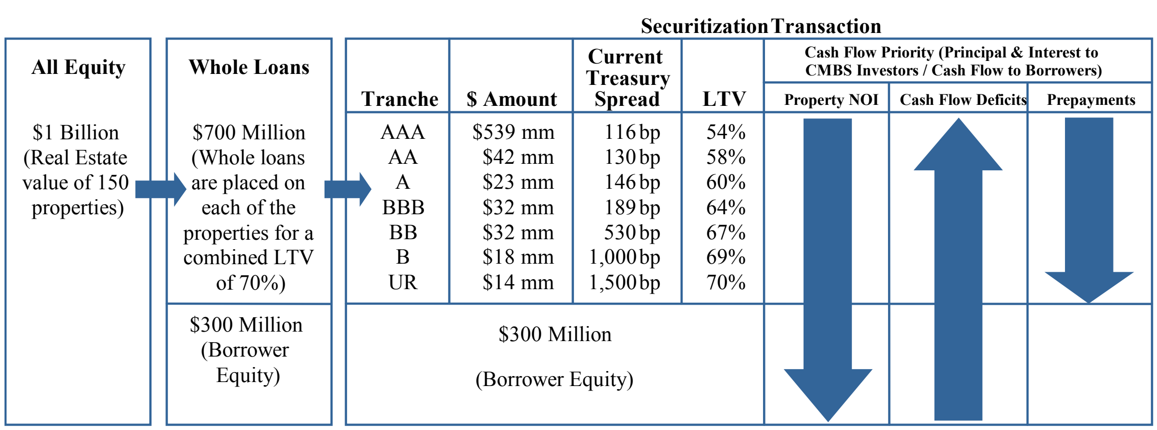
- *Greater Security From:*
  - *First Mortgage Liens on the Underlying Properties* – In the event of a default on an underlying loan in a CMBS transaction, the servicer of the loan may foreclose on the loan and pursue other remedies typically available to commercial mortgage lenders to recover as much principal and interest as possible.
  - *Credit Support* – High subordination levels have insulated CMBS from the changes in real estate fundamentals. Therefore, principal losses in investment-grade CMBS have been virtually non-existent due to the additional credit enhancement afforded by the subordination of below investment-grade classes. Below investment-grade classes typically comprise the bottom 8% to 10% of the transaction, meaning the BB, B and unrated classes incur losses of principal and interest before the BBB- class incurs losses. Figure's 1 & 2 below illustrate this additional credit enhancement.
  - *Borrower Equity* – The borrower on an underlying loan typically has cash equity invested in a property in addition to implied equity in a property from any increases in the value of the property collateralizing the loan. In the event the property is temporarily performing poorly, the borrower is motivated to keep the loan current to protect this equity.

FIGURE 1 — CMBS CASH FLOW DISTRIBUTION



Source: GMAC Institutional Advisors

FIGURE 2 — CREDIT SUBORDINATION LEVELS & DELINQUENCY COVERAGE MULTIPLES

CMBS vs. Residential MBS

Credit Subordination Levels *												
Vintage	AAA		AA		A		BBB		BB		B	
	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS
2001	20.8%	4.4%	17.3%	2.2%	13.4%	1.3%	9.5%	0.8%	5.0%	0.5%	2.3%	0.2%

CMBS vs. Residential MBS

Delinquency Coverage Multiple (Credit Subordination / Delinquency Rate) *												
Vintage	AAA		AA		A		BBB		BB		B	
	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS	CMBS	RMBS
2001	521	62	432	31	334	18	239	11	124	7	58	4

RETURNS

Last year, CMBS turned in an impressive performance relative to fixed income alternatives, and in retrospect, CMBS would have contributed significantly to an enhanced fixed income portfolio. This sort of performance points to the structural differences that provide CMBS more protection when credit conditions deteriorate.

FIGURE 3 — LEHMAN TOTAL RETURN INDEX FOR CMBS AND OTHER ASSET CLASSES FOR THE YEAR ENDED DECEMBER 2001

Index Components	Modified Duration	Total Return (%)		
		1 Year	3 Year	5 Year
High Quality				
CMBS Investment Grade	4.98	9.49	7.20	8.25
CMBS BBB	**5.64**	**10.74**	**9.78** (2)	**8.64**
Corporate BBB	4.52	9.24	5.89	6.74
Residential MBS	3.47	8.22	7.04	7.38
Asset Backed	3.10	9.81	7.47	7.42
Lehman Aggregate	4.63	8.44	6.28	7.43
High Yield				
CMBS High Yield	**5.84**	**11.13**	**13.71**	**10.69** (1)
CMBS BB	**6.06**	**9.68**	**12.33** (2)	**9.13**
Corporate High Yield	4.57	5.28	.622	2.96 (1)
US Treasuries 7-10 Yr.	6.21	6.82	5.08	7.53

(1) As of 1/31/97
(2) As of 1/8/97

Despite these conditions, AAA CMBS spreads are at the same level as 3 years ago. This stability of spreads in the wake of softening real estate markets continues to demonstrate the insulation provided by diversified CMBS transactions. In addition, corporate bonds display significantly higher return volatility, and therefore, CMBS should be expected to provide a much higher return per unit of risk.

FIGURE 4 — ADJUSTED RETURNS FOR VOLATILITY

	AA		A		BBB	
	CMBS	Corp	CMBS	Corp	CMBS	Corp
Expected Excess Return over Treasuries	1.25%	.88%	1.50%	1.54%	2.07%	2.24%
Standard Deviation of Monthly Excess Returns*	.61%	.65%	.64%	.84%	.73%	1.21%
Return per Unit of Risk	2.04	1.36	2.36	1.83	2.82	1.84

CORRELATIONS

Since the fall of 1998, the CMBS market has become more closely linked to swaps and certain other fixed income sectors. However as is indicated in the table below, CMBS are not highly correlated with corporate bonds and residential mortgage backed securities. This is a result of the superior structural and credit characteristics found in CMBS, whereas corporate bonds are suffering from corporate credit weakness and residential bonds are being affected by prepayments brought on by historically low interest rates.

CMBS CORRELATIONS WITH FIXED INCOME ALTERNATIVES

	LB Inv Grade CMBS	LB BBB CMBS	LB Baa Corp	LB Res. MBS	LB ABS	Lehman Aggregate	LB High Yield CMBS	LB BB CMBS	U.S. Corporate High Yield
LB Inv Grade CMBS	1.00								
LB BBB CMBS	0.85	1.00							
LB Baa Corp	0.87	0.75	1.00						
LB Res. MBS	0.91	0.70	0.83	1.00					
LB ABS	0.95	0.76	0.84	0.91	1.00				
Lehman Aggregate	0.94	0.75	0.90	0.93	0.94	1.00			
LB High Yield CMBS	0.57	0.82	0.51	0.41	0.46	0.45	1.00		
LB BB CMBS	0.62	0.86	0.54	0.45	0.50	0.48	0.98	1.00	
U.S. Corporate High Yield	0.20	0.30	0.45	0.14	0.10	0.16	0.281	0.285	1.00
US 7-10 Yr	0.85	0.63	0.78	0.82	0.89	0.94	0.35	0.39	-0.06

Number of Periods: **60**
Return Period: **1/97 - 12/01**
Source: GMAC Institutional Advisors

As we will describe, current spreads and loss-adjusted yields in CMBS are higher than the aforementioned alternatives; therefore, investors can achieve increased diversification due to imperfect correlation, coupled with superior performance. The net effect is a positive impact to a fixed income portfolio.

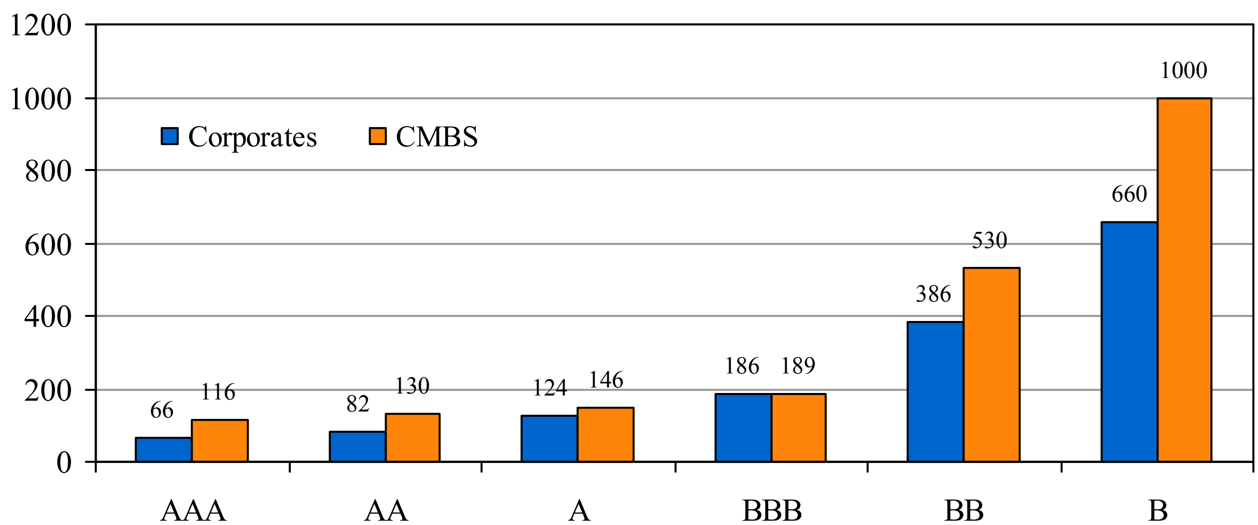
CMBS VERSUS CORPORATE BONDS

CMBS transactions allow an investor to analyze and commit to a static pool of collateral. With corporate bonds, there is no guarantee that the collateral pool will be static, which partially explains why corporate bonds tend to have a higher incidence of ratings transitions that do CMBS.

With BBB rated corporates, spread dispersion is extremely wide, as much as 50 basis points.

Better-regarded corporates, which trade at the low end of the spread range, will likely underperform with regard to return. Those at the wider end of the spread range risk defaults and downgrades due to weaker credit conditions in the corporate market and event risk inherent in corporate bonds.

YIELD SPREAD (BP) VERSUS CORPORATES AS OF MARCH 2002



Source: Morgan Stanley Dean Witter

Because of greater homogeneity in CMBS transactions stemming from the diversification within the transaction, they lack the spread dispersion of corporate bonds and are increasingly used by investors as a means of diversifying credit exposure and mitigating the effects of event risk.

Because of the divergence between solid loan performance in CMBS and escalating corporate defaults, investors have witnessed narrowing margins between the two classes. However, because of the structural and credit characteristics discussed herein, we believe CMBS continue to have excellent relative value compared to corporate bonds.

We believe the general course of corporate credit and corporate spread volatility will have more of an impact on CMBS spreads than real estate news, and therefore, CMBS will continue to outperform over the near term. For example in the first week of February, 2002, Morgan Stanley reported that spreads on corporate bonds backed by Ford, World Com, France Telecom and Williams widened 30, 70, 30 and 50 basis points, respectively. These one-week spread movements exceed the range of BBB CMBS during all of 2001. Furthermore, the CMBS market is a relative safe haven from the accounting related risk plaguing the corporate bond market.

CMBS has been broadly priced as a risky credit instrument. For example, AAA CMBS offers a spread concession of about 30 basis points to AA industrial corporates. These concessions are substantial considering that corporate bond defaults in 2000-2001 are at their highest levels since 1991. While many investors have recognized the strong relative value, the overall market has erroneously viewed CMBS as a "high beta" credit sector.

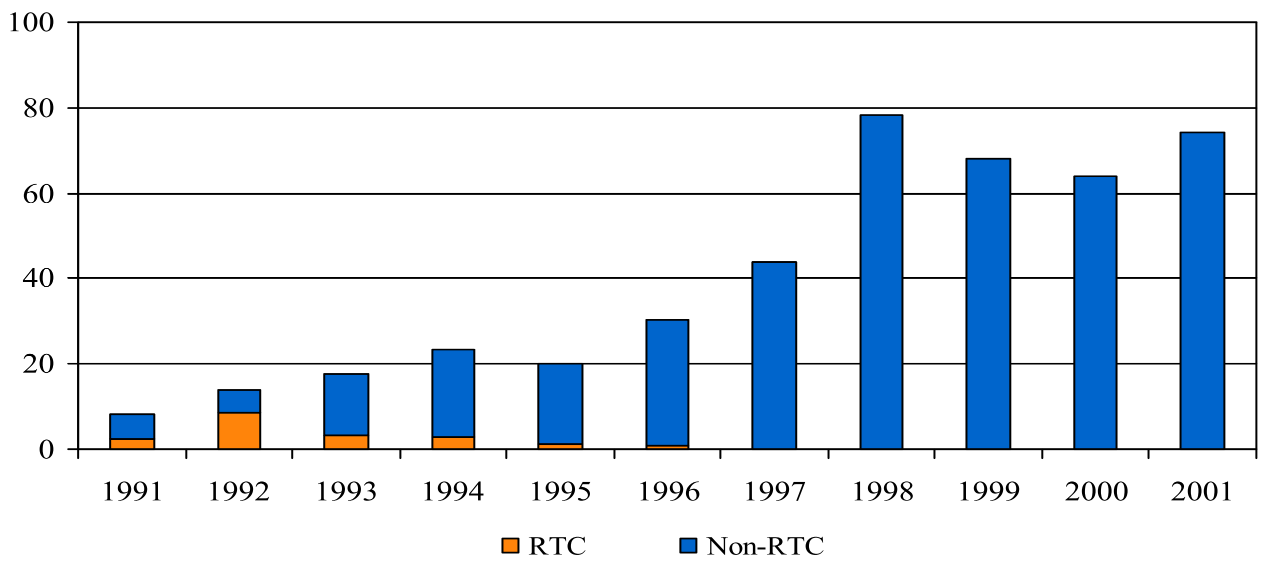
Prior to 2001, CMBS had never experienced a recession. Absent this stress test, many investors have retained substantial skepticism about CMBS credit, which has continued to be evidenced in wide spreads. In light of this phenomenon, attention should be directed to current CMBS delinquency. As discussed below, delinquencies in CMBS transactions stand at approximately 17% of the level reached during the real estate and economic recession of the early 90's.

Since CMBS trade at spreads in excess of corporate bonds, we believe CMBS investors are well compensated for the underlying risk. As investors increasingly become aware of this condition, we believe CMBS spreads will continue to compress relative to corporate bonds.

LIQUIDITY

The cumulative issuance of CMBS stands at approximately $350 billion as of year-end 2001. With the expanded number of outstanding securities and broader acceptance of CMBS by investors, liquidity has improved significantly.
In fact, investment grade CMBS can typically be sold within the same day.

CMBS NEW ISSUE VOLUME



Source: Commercial Mortgage Alert

CMBS SPREADS/LIQUIDITY*

		LIQUIDITY	
TRANCHE	**MARCH 2002 TREASURY SPREAD (BP)**	**TYPICAL BID.ASK SPREAD (BP)**	**TYPICAL TIME TO MARKET**
AAA	116	3	SAME DAY
AA – A	130 – 146	5	SAME DAY
BBB – BBB-	189 – 224	5 – 10	SAME DAY
BB	530	15 – 20	2 WEEKS
B	1,000	50	6 WEEKS

Source: GMAC Institutional Advisors
* Actual liquidity will vary based on transaction characteristics and market conditions.

The robust liquidity of the secondary markets will facilitate new investment in CMBS. The volume of secondary CMBS trading increased to $1 billion a week in 2001 from $800 million a week in 2000. In addition, the difference in secondary trading prior to the events of September 11 and after is not material. In the 12 weeks prior to and after September 11, the volume of secondary trading was $996.5 million and $968.5 million respectively.

Furthermore, the ease with which CMBS rebounded from the events of 1998 has not been lost on investors. Today the investor base is robust, as their exists a wide array of investors to facilitate liquidity, such as life insurance companies, CDO buyers, fixed income managers and hedge funds. This broad base of investors should further ensure that liquidity will stay in place through future market cycles.

PREPAYMENT RISK

CMBS enjoy significant call protection due to defeasance and prepayment penalties in commercial mortgages. As a result, CMBS lack the convexity risk of residential MBS, and with the recent decline in residential mortgage loan rates, that market will likely experience faster prepayments.

For example, a 10-year mortgage loan in a CMBS transaction is typically call protected via lockout, yield maintenance and defeasance for the first nine and-a-half years. Furthermore, the mezzanine CMBS classes (A and BBB rated) have additional protection against prepayment risk as the senior classes (AAA) typically incur prepayment events first, as is illustrated in Figure 1 on page 4.

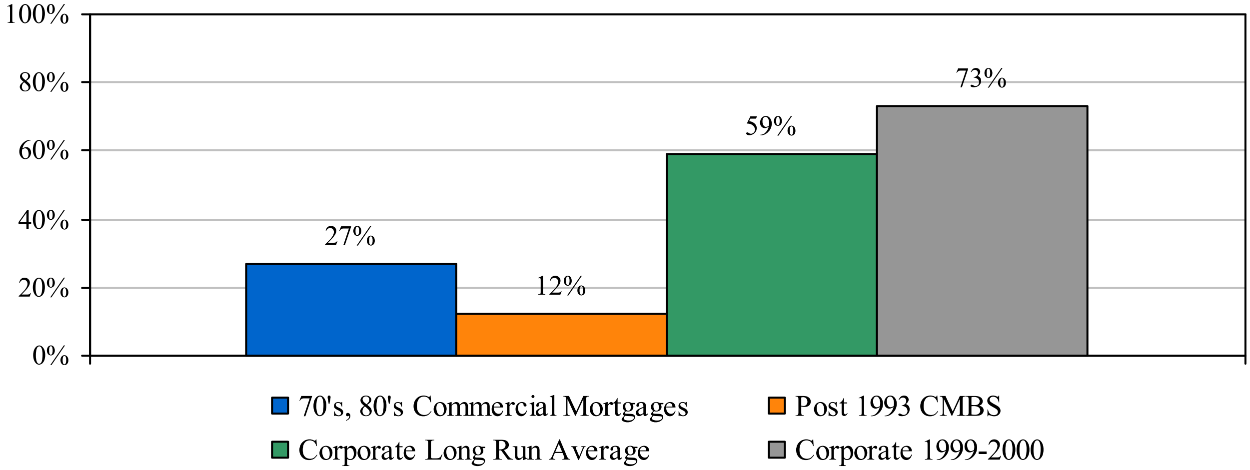
Since 1997, defeasance has supplanted other forms of call protection. In 2002, an average of 94% of the loans collateralizing CMBS transactions required defeasance. Strong call protection on securitized mortgage loans assures stable cash flows, irrespective of interest rates fluctuations. Weighted-average lives do not change and modified durations shorten when yields rise. This positive convexity benefits the performance of CMBS.

DEFAULTS

Historically, the reduction in annual yields stemming from defaults in commercial mortgages and BBB rated corporate bonds has been about equal at 30 basis points. Given that the corporate bond market is fully mature, the corporate incidence and severity of defaults is not likely to change in the future.

However, due to structural changes that have occurred in the commercial mortgage market over the last ten years, the incidence of default has declined. These changes will likely result in a decline in the long-term average as well. The annual incidence of default has historically run at approximately 2% from the 60's through the early 90's. Today, it ranges from 25 to 50 basis points. If we assume an incidence of default of 50 basis points with an average long term default severity of 25%, the yield impact to commercial mortgages is 12.5 basis points versus 30 basis points for corporate bonds.

DEFAULT LOSS SEVERITY: CMBS VERSUS HIGH YIELD CORPORATE BONDS



Standard & Poor's reports that of the transactions they rate, CMBS experienced a record 174 upgrades and 62 downgrades last year. The ratings actions are a result of seasoned transactions continuing to benefit from increased subordination levels and improved property performance. Downgrade activity was primarily driven by hotel properties, which have suffered in the wake of the September 11 tragedy, and by credit tenant lease ("CTL") properties.

In the fourth quarter, S&P lowered ratings on 43 transactions, 35 of which were driven by CTL properties occupied by Kmart and Alliant Energy Corp. CTL loans do not typically reside in traditional "generic" CMBS transactions, which comprise the bulk of the market. As such, the impact from CTL backed CMBS transactions overstates the ratings actions on the core CMBS market. CTL loans are secured by a property with a single corporate tenant and are typically fully leveraged (100%+ LTV).

The structural and diversification benefits in CMBS are evident in the ratings transitions of the various classes of CMBS. For example, the table below illustrates that of the 180 rating actions taken on BBB CMBS last year, 88 bonds were affirmed, 87 bonds were upgraded to single-A or higher, and only 5 bonds were downgraded to BB.

2001 RATING ACTIONS

	TO								
	Class	**AAA**	**AA**	**A**	**BBB**	**BB**	**B**	**CCC and Below**	**Total**
FROM	**AAA**								0
	AA	102	56						158
	A	17	63	59				1	140
	BBB	**10**	**25**	**52**	**88**	**5**			**180**
	BB	2	5	10	29	25	6	1	78
	B	1		1	2	24	21	10	59
	CCC and Below	0					1	4	5
	Total	132	149	122	119	54	28	16	620

Source: Morgan Stanley Dean Witter

DELINQUENCY

Underwriting standards have held firm due to the discipline imposed and enforced by non-investment grade CMBS buyers. Delinquency on all CMBS transactions stands at 1.3%, well below the historical high water mark of over 7% for the commercial mortgage market during the recession of the early 90's.

We believe delinquencies will likely trend up in excess of 2% over the next 18 months, as delinquencies typically lag overall economic conditions. However at this level, the majority of below investment grade bonds should not be at risk for a rating downgrade.

Current CMBS credit performance remains impressive versus the performance registered in certain sectors of competing structured-securities markets and the corporate bond market. For example, according to the most recent Moody's performance indices, home equity, credit card and prime auto delinquencies were 9.22%, 5.07% and 2.01%, respectively. Corporate bonds were also weak in 2001. 182 U.S. companies defaulted for an 11% default rate, tying the record set in 1991. As mentioned above, total CMBS delinquencies stand at 1.3%.

REAL ESTATE MARKETS

Due in large part to better transparency in the commercial real estate markets and greater public market oversight on the industry, the real estate markets remain on solid footing. Despite some tenant bankruptcies in retail properties, delinquency levels are a fraction of those experienced during the commercial real estate recession of the early 90's.
In addition, underwriting standards have held firm due to the discipline imposed and enforced by non-investment grade CMBS buyers.

In addition, the dual excesses of the real estate market in the early 1990's were over supply and over-evaluation. Today, the fundamentals that drive income are sound, and property valuations are in check. As is indicated in the chart below, vacancy and new construction remain below the levels reached in 1990. Real Estate Investment Trusts ("REITs") are in better health and a proper relationship exists between U.S. Treasury and property yields.

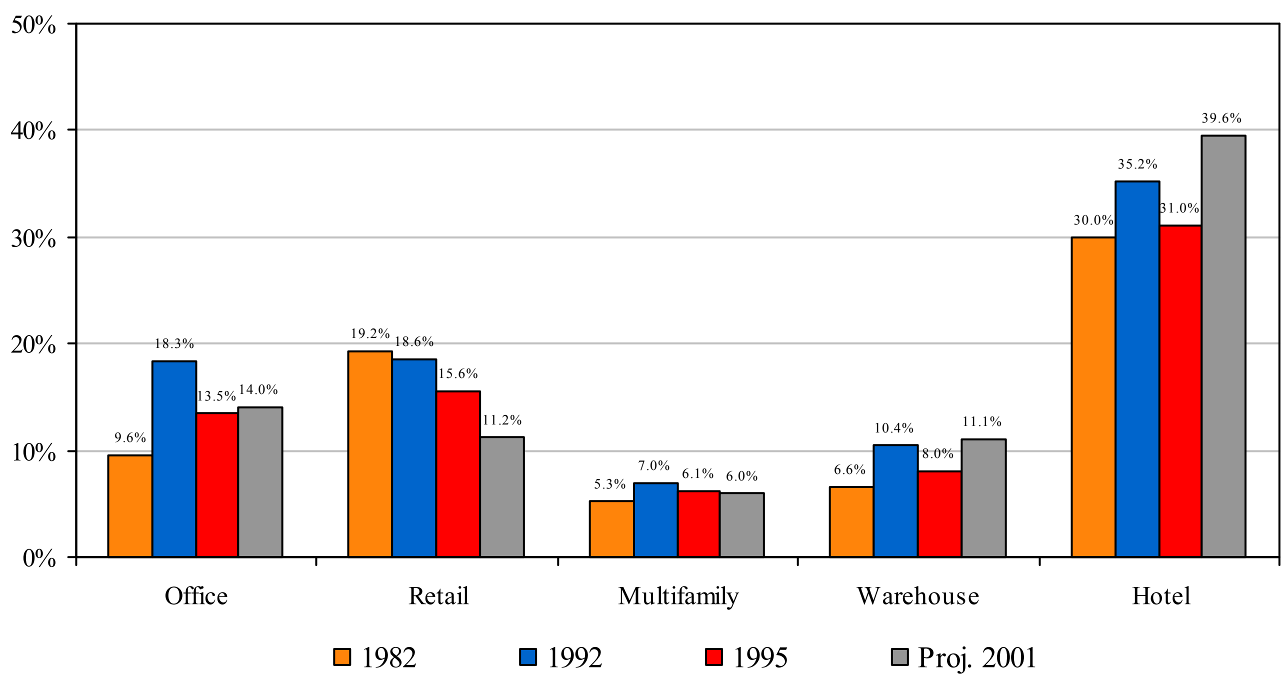
	Start of Recession, June 30, 1990	**Recession 9 Months Old, December 31, 2001**
Vacancy Rate (1)	18.6%	13.5%
New Supply Pipeline (2)	100	67
REIT Earnings Growth (3)	-1.1%	6.1%
REIT P/E Multiple (4)	12.7	10.7
10-year Treasury	8.1%	5.1%
Property Income Yields (5)	6.8%	8.3%

Sources: F.W. Dodge; NCREIF; Torto Wheaton Research; JPMorgan; NAREIT; Federal Reserve
(1) National Office Vacancy Rates
(2) New supply pipeline uses trailing 12-month construction starts divided by GDP, indexed 1990=100.
(3) Earnings growth is measured over a trailing four-quarter period.
(4) P/E Multiple is asset price divided by one-year forward net operating income.
(5) Annualized growth is measured over a trailing four-quarter period.

The weakness detected in certain property types and MSA's is driven primarily by demand, not supply. As the U.S. economy emerges from the current recession, demand for commercial real estate should increase. In addition, we believe CMBS loan performance is more likely to resemble loan performance of life companies during the 1980 to 1982 recession. The exception will likely be hotel properties, which are experiencing a decline of historic proportions, fueled in part by the events of September 11th. Fortunately however for CMBS investors, hotel properties typically do not comprise more than 10% of CMBS transactions.

During the 1980 to 1982 recession, delinquency remained at historic lows, as there was not an overhang of excess property supply going into the recession, as was the case in the recession of the early 90's. However in 1982, corporate defaults spiked in classical fashion. Please see the chart below for a comparison of vacancy rates during times of economic weakness. This potentially low correlation of defaults between CMBS and corporate bonds is additional evidence to suggest that CMBS would play an important diversifying role in a fixed income investor's portfolio.

VACANCY RATES BY PROPERTY TYPE



Source: JP Morgan, Bear Stearns

CONCLUSION

We believe that improving market transparency, historical collateral performance, superior returns and liquidity reinforce the argument for the inclusion of CMBS in fixed income portfolios. In addition, it is hard to ignore the structural and credit characteristics that reside in CMBS relative to other asset classes that should enable the CMBS market to continue to outperform over the long haul.

We believe that CMBS should have a material role in institutional investors' fixed income portfolios due to the following:

- *Size of Market* – With cumulative outstanding CMBS issuance in excess of $400 billion, the CMBS market is here to stay and should no longer be viewed simply as an experimental spin off from the Resolution Trust Corporation.
- *Liquidity* – CMBS demonstrated during the capital market turmoil in 1998, and again last September, that they could remain liquid in an unstable market environment. Since this time, liquidity has only improved.
- *Superior Spreads and Risk Adjusted Returns* – CMBS continue to enjoy a spread advantage to corporate bonds, while offering superior credit and structural characteristics.
- *Superior Credit Performance* – These superior credit and structural characteristics should enable CMBS to outperform corporate bonds in a weak economy.
- *Strong Pre-payment Protection* – Due to strong underlying call protection at the loan level, combined with structural features that provide additional protection to mezzanine CMBS classes, CMBS are resilient to interest rate movements relative to residential mortgage backed securities.
- *Increasing Market Transparency* – Market transparency has come of age through the use of technology and standardization of documentation and reporting procedures made possible by the Commercial Mortgage Securities Association.