# Meeting Between Federal Reserve Board Staff and Representatives of Jeffries \& Company, Inc. (Jeffries) and Porterfield, Lowenthal \& Fettig LLC (Porterfield) September 27, 2010 

Participants: Matthew Eichner, Lawrence Rufrano, Karen Pence, William Treacy, April Snyder, Sebastian Astrada, and Flora Ahn (Federal Reserve Board)

Lisa Pendergast and Michael Sharp (Jeffries); and Andrew Lowenthal and Brendon Weiss (Porterfield)

Summary: Staff of the Federal Reserve Board met with representatives of Jeffries and Porterfield about commercial mortgage-backed securities (CMBS) and the Federal Reserve Board's responsibilities under section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Jeffries' representatives provided Federal Reserve Board Staff with a presentation on the performance of the CMBS market through the financial crisis and their overall views on risk retention. A copy of the handout provided by Jeffries at the meeting is attached below. The handout formed the basis for discussions at the meeting and summarizes the issues discussed.

Commercial Real Estate and
Commercial Mortgage-Backed Securities

## 2010 CMBS: A Volatile Road to Recovery

Lisa Pendergast

Managing Director, CMBS Strategy \& Risk
Jefferies \& Company, Inc.
203-363-8232
Ipendergast@jefferies.com

## Jefferies

## Table of Contents

I: Key Themes in the Commercial Real Estate Debt and Property Markets ..... 3
II: Have U.S. Government Programs Helped Commercial Real Estate/CMBS? ..... 6
III: Drivers of CMBS Loan Performance ..... 18
IV: Detailed Analysis of Current Loan Performance and Trends ..... 25
V: The Refinance Conundrum: CMBS Fixed- and Floating-Rate Loan Maturities ..... 38
VI: CRE Loan Historical and Projected Default and Loss Seasoning Curves ..... 44
VII: Rating Agency CMBS Actions ..... 52
VIII: The Commercial Real Estate Space Markets ..... 68
IX: Relative Value in Cash and Synthetic CMBS ..... 69

Key Themes in the Commercial Real Estate Debt and
Property Markets

## Key Themes

- CMBS Lending Markets Beginning to Defrost
- Ten new-issue CMBS since June 2008
- Healthier regional banks and life companies cautiously lend:
- Lending bifurcated by loan size and acquisitions vs. refinancings
- Banks still holding underwater assets
- The Role of the U.S. Government and Changing Regulation
- TALF for New-Issue and Legacy CMBS set to expire
- RTC-2: Loan Sales + Securitization
- FAS 166/167
- Regulatory Reform: Skin in the game for CMBS issuers, rating agency reform + Scarlett Letters
- CRE Property Values Decline 25\% to 60\%+ Peak to Trough
- Capitalization rates rise on deteriorating fundamentals and sharply higher financing costs, but will bifurcate by distressed and non-distressed assets
- Net cash flow falls as recession takes holds on


## Key Themes

- CMBS Delinquency Rate Poised to Rise to $\mathbf{1 0 \%}$; Surpass Highs of Previous Cycle
- Aggressive pro-forma underwriting assumptions fail to materialize
- Borrowers of 'seriously' underwater assets with negative cash flow capitulate (imminent defaults)
- Projected 14\% Average Cumulative Loss in CMBS Pools Exceeds $<10 \%$ Average of Previous Cycle
- Cumulative losses highest on 2006 to 2008 vintages at $8 \%$ to $20 \%$
- Rating Agency Considerations
- Rating agencies render themselves obsolete as arbiters of credit risk, but will play a role going forward
- Does the rating agency model change and do securitized bonds get the "Scarlet" letter
- Silver lining is 'squeaky clean' new-issue CMBS on sharply lower property values
- Not just CMBS downgrade concerns... master servicers and special servicers face serious operational risks
- Going "TALF-less": Secondary CMBS Spreads Sharply Tighter from November 2008 Widest Levels
- CRE fundamentals provide redemption for super-senior AAA bonds, but bode poorly for non-AAAs
- CMBS extension risk/loan modifications and rising cumulative losses weigh heavy on investor psyches
- 2010: The year of the credit bond - not for amateurs
- CMBS IOs that benefit from extension risk

Have the U.S. Government Programs Helped Commercial Real Estate / CMBS?

Is There an Afterlife for Securitization, the U.S. Treasury Says 'Yes'

- "... $40 \%$ of consumer lending has historically been available because people buy loans, put them together and sell them." Secretary Timothy Geithner, U.S. Department of the Treasury
"Because this vital source of lending has frozen up, no financial recovery plan will be successful unless it helps restart securitization markets for sound loans made to consumers and businesses - large and small.'
- This lending program will be built on the Federal Reserve's Term Asset Backed Securities Loan (TALF) Facility... with capital from the Treasury and financing from the Federal Reserve.


## Regulatory Reform Update

- Financial Reform
- March 15, 2010 Proposed Senate Bill
- Risk Retention. Securitizers to retain economic interest of at least 5\% of credit risk of any asset transferred to ABS. Securitizers are issuers who initiate a transaction by selling/transferring assets to an issuer. Retention percentage can be lowered if assets meet certain underwriting standards. Rules prohibit securitizer from directly/indirectly hedging or transferring risk. Separate rules regarding duration of retention \& permissible forms of retention apply for distinct asset classes. Rules provide for total or partial exemption of any securitization 'as may be appropriate in the public interest or for the protection of investors." Regulations are to be jointly developed by the OCC, FDIC and SEC: appropriate banking agency enforce rules for banking institutions, and SEC for all others. The House bill differs in that it specifically allows for customized retention for CMBS, given the concept of third-party purchaser of first loss position (B-piece buyer)
- Enhanced Disclosure: The SEC must adopt rules to impose more stringent disclosure requirements for ABS:
- Credit Rating Agency Reform. No mandate of differentiated symbols for structured finance products. Numerous oversight and reporting requirements for CRAs, including new office with the SEC to regulate them, annual examinations, and requirement that analysts meet qualifications standards to be developed by the SEC.
- Changes in Securitization Accounting and Capital Requirements
- The underlying loans of a securitization be consolidated on the balance sheet of the issuer/sponsor. This is the first-loss investor for CMBS


## Outstanding Debt Market Size Comparison



[^0]
## U.S. Government Plays Integral Role in Thawing Frozen Capital Sources

- Federal Reserve and U.S. Treasury introduced Term Asset-Backed Securities Loan Facility (TALF) in 3/09 to:
- Stabilize the CMBS marketplace and drive distressed prices higher over time
- Drive down lending costs and encourage new lending as CMBS spreads tighten
- Program Objectives:
- Restore liquidity to the CMBS market
- Stem CRE property value declines
- Lower commercial-mortgage defaults



## Legacy CMBS TALF Successful But Quirky

| CMBS TALF Subscription Volume |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Legacy CMBS | Legacy CMBS TALF | New-Issue CMBS |
| Subscription | TALF Requested | Settled | TALF Settled |
| Jun-09 | \$0 | \$0 | \$0 |
| Jul-09 | \$668,940,185 | \$668,940,185 | \$0 |
| Aug-09 | \$2,283,323,490 | \$2,148,314,045 | \$0 |
| Sep-09 | \$1,401,924,696 | \$1,351,097,649 | \$0 |
| Oct-09 | \$2,124,921,093 | \$1,930,574,358 | \$0 |
| Nov-09 | \$1,417,579,146 | \$1,329,532,153 | \$72,248,483 |
| Dec-09 | \$1,324,853,713 | \$1,282,444,544 | \$0 |
| Jan-10 | \$1,453,433,253 | \$1,325,983,320 | \$0 |
| Feb-10 | \$1,255,719,991 | \$1,133,023,281 | \$0 |
| Mar-10 | \$1,259,670,126 | \$857,002,698 | \$0 |
| Total | \$13,190,365,693 | \$12,026,912,233 | \$72,248,483 |

Source. New York Federal Reserve

CMBS SS A4 AAA Historical Spreads


## Public-Private Investment Funds (PPIFs) for Legacy CMBS Securities: Underwhelming

- PPIP finally underway in October 2009
- Allows Treasury to partner with leading investment management firms to:
- Increase the flow of private capital to the CMBS marketplace
- Provide upside potential for U.S. taxpayers as Treasury equity capital is invested side-by-side with private funds
- Approved Fund Managers raise private capital and receive matching equity capital from Treasury
- Treasury will invest up to $\$ 30$ billion of equity and debt in PPIFs
- Partnerships dissolve 8 years from closing date with option by Treasury to extend
- Fun Managers must invest a minimum of $\$ 20$ million of firm capital into the PPIF
- Full-turn election: Treasury debt financing up to $100 \%$ of the total equity of the PPIF
- Warrants equal to $2.5 \%$, no additional debt other than UST leverage is permitted
- Half-turn election: Treasury provides up to $50 \%$ of the capital commitment
- Warrants equal 1.5\% and additional third-party debt permitted via TALF
- Eligible CMBS
- Issued prior to 2009 and secured directly by mortgage loans, leases, or other assets; Originally rated AAA


## Public-Private Investment Funds for Legacy CMBS Securities

- Approved fund managers and initial closings
- AllianceBernstein, LP and its sub-advisors Greenfield Partners, LLC and Rialto Capital Management, LLC - (CLOSED)
- Angelo, Gordon \& Co., L.P. and GE Capital Real Estate (CLOSED)
- BlackRock, Inc. (CLOSED)
- Invesco Ltd. (CLOSED)
- Marathon Asset Management, L.P. (CLOSED)
- Oaktree Capital Management, L.P. (CLOSED)
- RLJ Western Asset Management, LP. (CLOSED)
- The TCW Group, Inc. (CLOSED, FROZEN)
- Wellington Management Company, LLP (CLOSED)
- PPIFs have completed initial and subsequent closings on approximately $\$ 6.2 \mathrm{~B}$ of private sector equity capital and matched $100 \%$ by Treasury for $\$ 12.4$ billion of total equity capital. (as of December 01, 2009)
- Treasury also provided $\$ 12.4$ billion of debt capital, representing $\$ 24.8 \mathrm{~B}$ of total purchasing power.
- PPIFs have drawn-down approximately $\$ 4.3$ B of total capital (as of 12/31/2009)
- Following an initial closing, each PPIF may execute for two more closings over the following six months to receive matching Treasury equity and debt financing, with a total Treasury equity and debt investment in all PPIFs equal to $\$ 30 B$ ( $\$ 40 B$ including private investor capital).


## Public-Private Investment Funds for Legacy CMBS Securities

| PPIF Progress Report |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Closed Equity and Debt Capital (\$MM) |  |  |  | Performance |  |
| Fund | Closing Date | Private Equity | Treasury Equity | Treasury Debt | Purchasing Power | Inception Date | Net <br> Perf.** |
| AG GECC PPIF Master Fund, L.P. | 10/30/2009 | 653 | 653 | 1,307 | 2,614 | 11/12/2009 | 3.9\% |
| AllianceBernstein Legacy Securities Master Fund, L.P. | 10/2/2009 | 1,060 | 1,060 | 2,121 | 4,241 | 10/23/2009 | -0.6\% |
| Blackrock PPIF, L.P. | 10/2/2009 | 582 | 582 | 1,164 | 2,329 | 10/16/2009 | 1.0\% |
| Invesco Legacy Securities Master Fund, L.P. | 9/30/2009 | 506 | 506 | 1,012 | 2,024 | 10/13/2009 | 2.8\% |
| Marathon Legacy Securities Public-Private Investment Partnership, L.P. | 11/25/2009 | 400 | 400 | 800 | 1,600 | 12/15/2009 | -1.4\% |
| Oaktree PPIP Fund, L.P. | 12/18/2009 | 456 | 456 | 912 | 1,823 | NA | NA |
| RLJ Western Asset Public/Private Master Fund, L.P. | 11/5/2009 | 505 | 505 | 1,010 | 2,021 | 11/23/2009 | 3.3\% |
| UST/TCW Senior Mortgage Securities Fund, L.P.* | 9/30/2009 | 1,014 | 1,014 | 2,028 | 4,056 | 10/19/2009 | 70.0\% |
| Wellington Management Legacy Securities PPIF Master Fund, LP | 10/1/2009 | 1,017 | 1,017 | 2,033 | 4,066 | 10/19/2009 | 1.2\% |
| Total Closed |  | 6,194 | 6,194 | 12,387 | 24,774 |  |  |
| Total Allowable |  | 10,000 | 10,000 | 20,000 | 40,000 |  |  |

Source: US Treasury
*On January 4 2010, Treasury and TCW entered into an agreement to terminate this fund when key investment professionals left the firm. Pursuant to the agreement, all limited partners w ere released from capital commitments and the PPIF's holdings were liquidated. Treasury did not incur any loss as a result of the termination and currently expects, based on preliminary reports it received from the fund manager, that the TCW PPFF limited partners (private investors and Treasury) w ill realize a profit. TCW limited partners w ill have the ability to re-allocate capital to other PPIFs.
** Ferformance is net of management fees and expenses attributable to Treasury. $N A=$ Not Applicable as the fund has not drawn dow $n$ capital as of $12 / 31 / 09$.


Source. Jefferies \& Ca.

## New-Issue CMBS TALF: Also Underwhelming

## Program Parameters

- May 1, 2009. Fed expands eligible collateral to include new-issue CMBS under TALF
- Issuer. Must not be an agency or instrumentality of the U.S. or a GSE
- Eligible Collateral. Cash fixed-rate $\mathrm{P}+\mathrm{I}$ CMBS issued on or after 1/1/09. Highest long-term IG rating from 2 or more agencies; not junior to other securities w/ claims on same pool of loans
- Asset Types
- Fully-funded, $1^{\text {st_-priority, fixed-rate commercial mortgage loans; fee or leasehold interests in one or more income- }}$ generating commercial properties in U.S./territories
- CMBS, other securities or interest-rate swap/cap instruments or other hedging instruments or IO loans not eligible
- Origination Dates. All mortgage loans must be originated on or after July 1, 2008
- Underwriting. Then-current in-place, stabilized/recurring NOI and then-current property appraisals
- Available Loans. Three- and five-year TALF loans - same rates and haircuts apply as in legacy CMBS TALF
- TALF Loan Principal Repayment. All CMBS principal cash flows applied to TALF loan in proportion to advance rate
- Capping of interest on 5-year TALF Ioan
- Excess interest on the CMBS bond over interest on TALF loan remitted to the TALF borrower, until:
- Excess interest equals 25\% of haircut amount within one full year; or excess interest equals $10 \%$ and $5 \%$ of the haircut in years four and five, respectively


# Drivers of CMBS Loan Performance 

## CMBS Loan Performance versus Residential

- Subprime ARM delinquencies at $54.6 \%$ as of 2Q10
- Prime ARM delinquencies sharply lower at $12.3 \%$ as of 2Q10
- Fixed-rate CMBS delinquencies at $\mathbf{8 . 2 9 \%}$ as of 2Q10


Source: Jefferies \& Co.
Jefferies ${ }^{\text {K }}$

## CRE Property Valuations Plummet by $41 \%$

- Single-Family Residential Home Prices (as of 07/10)
- Lower by $27.9 \%$ from 7/06 peak
- Commercial Property Prices (as of 06/10)
- Lower by 41.4\% from 10/07 peak
- Declines will vary by asset type/quality/location
- By Property (peak thru 2Q10)
- Retail: -39.25\%
- Office: -30.81\%
- Industrial: -35.29\%
- Multifamily: -30.46\%

Residential Vs. Commercial Real Estate Values


Capitalization Rates: A Dysfunctional Measure in Current Crisis

- Early-'90s crisis pushed cap rates up 400 bps to $\mathbf{9 . 6 2 \%}$
- Excess supply: Tax-code changes spur development
- Lack of demand: Recession
- 1995-2008 cap rates plummet to historical lows
- Seven consecutive YOY declines; falling 38\% from '00 thru '08, before rising in '09
- Cap rates now dysfunctional as property transaction volume plummets
- Debt yields. Key barometer of risk
- Lenders require >10\% debt yields (ratio of NOI/NCF and Debt)




## Aggressive Underwriting/Increased Leverage = Higher Losses

- Growing number of performing loans with DSCRs less than $1.0 x$ spell more trouble ahead
- $10 \%$ to $20 \%$ decrease in NOI; Recent vintage loans pressured by overly aggressive $r$ ro-forme underwriting, expiring IO payment periods, pending maturities

| Conduit/Fusion Fixed-Rate CMBS Deal Composition and Credit Statistics |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2010 | 2009* | 2008* | 2007* | 2006* | 2005* | 2004 | 2003 | 2002 |
| Total Issuance (\$B) | 4.71 | 1.36 | 10.74 | 188.55 | 161.76 | 136.44 | 74.17 | 52.88 | 34.36 |
| Avg. Deal Size (\$B) | 0.67 | 0.45 | 1.34 | 3.60 | 2.61 | 2.18 | 1.24 | 1.17 | 1.01 |
| Avg. Loan Size (\$M) | 12.23 | 11.28 | 14.18 | 17.94 | 14.52 | 13.93 | 11.63 | 9.95 | 8.25 |
| Largest Loan \% | - | 13.10 | 11.64 | 9.97 | 9.48 | 8.69 | 10.35 | 9.10 | 8.77 |
| Avg. AAA Credit Enhancement (\%) | 24.00 | 21.52 | 13.55 | 12.00 | 12.02 | 12.67 | 13.81 | 16.78 | 19.56 |
| Avg. BBB-Credit Enhancement (\%) | - | - | 4.14 | 3.12 | 3.06 | 3.33 | 3.61 | 4.47 | 8.10 |
| \% of IO Loans (Partial) | - | - | 49.25 | 30.22 | 45.20 | 41.86 | NA | NA | NA |
| \% of lO Loans (Term)** | - | - | 30.05 | 55.82 | 29.15 | 21.79 | 34.62 | 13.32 | 6.11 |
| Moody's Stressed DSCR | 1.54 | 1.52 | 0.91 | 0.91 | 1.00 | 1.05 | 1.19 | 1.28 | 1.27 |
| Moody's Stressed LTV (\%) | 73.00 | 65.20 | 106.72 | 111.24 | 100.50 | 96.40 | 87.67 | 83.51 | 85.98 |
| Subordinate Debt*** | 47.00 | - | 39.80 | 54.63 | 43.73 | 39.64 | 28.90 | 27.24 | 8.58 |
| B-notes (\%) | 6.40 | - | 4.91 | 8.09 | 6.90 | 7.07 | 10.19 | 13.09 | 7.88 |
| IG Rated Loans (\%) | - | - | 6.48 | 7.04 | 11.83 | 13.90 | 22.04 | 22.94 | 14.32 |

Sources: Jefferies 8 CO . Fitch. S\&P. and Moodys. 2005 thru 2009 represent AJ CE. ${ }^{* 2002-2005}$ IO percentages reflect initial and term IO loans combined. .min-place and allowable.


## Recent Examples of Steep Commercial Property Valuation Declines

- \$3.0bn Stuyvesant Town and Peter Cooper Village (WBCMT 07-C30, WBCMT 07-C31, MLCFC 07-5, MLCFC 07-6, CWCI 07-C2)
- Fitch valued the $\$ 5.4 \mathrm{~b}$ property at $\$ 1.8 \mathrm{~b}$ in late 2009
- Interest shortfalls rise to originally-rated 'BB' class
- $\quad \$ 125.2 \mathrm{~mm}$ Promenade Shops at Dos Lagos (JPMCC 08-C2)
- $\$ 170 \mathrm{~mm}$ original value falls to $\$ 69.6 \mathrm{~mm}$
- Interest shortfalls rise to originally-rated 'AA' rated class
- \$115.6mm Boscov's Portfolio Loans (BACM 06-3)
- $\$ 182.7 \mathrm{~mm}$ original value falls to $\$ 40.5 \mathrm{~mm}$;
- Interest shortfalls rise to originally-rated 'AA' rated class
- \$81.1mm West Oaks Mall Loan (GCCFC 06-GG7):
- $\$ 109.8 \mathrm{~mm}$ original value falls to $\$ 13.6 \mathrm{~mm}$ (liquidated in $12 / 09$ with a loss of 78.5 mm )
- Interest shortfalls rise to originally-rated 'BBB-' rated class
- \$225mm Riverton Apartment Loan (CD 07-CD4)
$-\quad \$ 260 \mathrm{~mm}$ original value falls to $\$ 108 \mathrm{~mm}$
- Interest shortfalls rise to originally-rated 'BBB' rated class


## Weighing the Risks of Default in a Commercial-Mortgage Pool

- Reasons for borrowers to hold on...
- Focus on long-term returns
- Property net cash flow covers debt service
- Significant 'scarcity' value and attractive features of current loans
- Low mortgage rates, high percentage of full-term or partial-term interest-only periods
- Negative tax consequences in a default associated with debt forgiveness
- And reasons not to
- Sharp declines in CRE values coupled with declining net cash flow act as disincentives to carry property until conditions improve, particularly in significant cash take-out via current loan
- Massive public-to-private deals in '05-'07 of property value peaks suggest little incentive to go "out of pocket" to pay debt service
- Maguire Properties gives back seven large office properties; Lembi Group gives back 51 multifamily properties (1,500 units) to lender UBS


# Detailed Analysis of Current Loan Performance and Trends 

CMBS Issuance Plummets, REIT Surprises to the Upside


## GNMA Project Loan REMIC Issuance Soars

GNMA Project Loan REMIC Issuance vs. CMBS


Sources. Elcomberg: Intex Solutions, Inc., Jefferies \& Co. "YTD 2010

## 2009-2010 YTD Agency CMBS Issuance Expands

- GNMA continues to issue Project Loan multifamily/healthcare backed REMIC securities
- Total $\$ 6.0$ billion in 2009; $\$ 8.3$ billion YTD 2010
- FHLMC begins securitizing it's nultifamily loans beginning on 06/09
- Total $\$ 7.7$ billion; $\$ 6.6$ billion from 2009 to YTD 2010
- FNMA begins securitizing it's 10/9.5 DUS nultifamily loans in 10/09
- Total $\$ 4.1$ billion from 2009


## Commercial Mortgage Delinquencies Plague FDIC Insured Institutions

- "Problem List" expands to 15-Year High - largest amount of assets since June 30, 1994 (as of 2Q10)
- 57 institutions were merged into other institutions in 2009, 45 institutions failed, during the quarter
- FDIC's "Problem List" rose to 829 institutions with combined assets of $\$ 403$ billion
- Sheila Bair, FDIC Chairman:
- "Commercial real estate is a looming problem. It's going to be a bigger driver of bank failures toward the end of this year and into next year." (9/2/09)

| FDIC Insured Institutions Loan Perform | Lloans Secur | y Real E | as of Ju | , 2010) |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 30-89 Days | Non- |  |  |
|  | Loans Outstanding (\$B) | $\begin{gathered} \text { Past Due } \\ (\%) \\ \hline \end{gathered}$ | Current** (\%) | Total Past Due (\%) | $\begin{gathered} \text { Charged-Off } \\ (\%) \\ \hline \end{gathered}$ |
| All Loans Secured by Real Estate | \$4,336.80 | 1.96 | 7.32 | 9.28 | 1.97 |
| Construction and Development* | \$383.30 | 2.36 | 16.87 | 19.23 | 5.14 |
| Nonfarm nonresidential | \$1,081.00 | 1.14 | 4.28 | 5.42 | 1.12 |
| Multifamily residential real estate | \$214.70 | 1.06 | 4.16 | 5.22 | 1.20 |
| Home equity loans | \$654.50 | 1.16 | 1.71 | 2.87 | 2.89 |
| Other 1-4 family residential | \$1,874.30 | 2.79 | 9.75 | 12.54 | 1.65 |

Source. FDIC, *Construction and development loans includes loans for all property types under construction, as well as loans for land acquisition and
developmert. **Non-current loan rates represent the perentage of loans in each category that are past due 90 days or more or that are in non-accrual status.

## Fixed-Rate CMBS Delinquencies to Rise to >10\% by Year-End 2010

- Fixed CMBS delinquency rate up 466 basis points YOY (as of 08/10)
- $8.7 \%$ delinquency rate
- Previous all-time high of $7.53 \%$ in 6/92 (Life co. loans)
- Exceeds previous CMBS universe high of $2.48 \%$ in $10 / 03$

Fixed-Rate Conduit CMBS Special Serviced \& Delinquent

- Delinquent plus current \& special serviced loans at 13.11\%
- Dollar volume of delinquent loans more telling than rate...
- $\$ 55.6$ billion in $08 / 10$ vs. $\$ 28$ billion in 08/09
- Drivers of CRE performance post-9/07
- Reduced sources of capital
- High levels of leverage on CRE loans
- U.S. recession
- Overly optimistic cash-flow assumptions/minimal to no upside in property valuations


## Special-Servicer Loan Volume Soars

- Many loans moving directly from current status to special servicing as borrowers cry "Imminent Default"
- 2005 vintage five-year loans main driver of increased SS loans in 2010
- Sharp upward volume in SS loans raises concerns of interest shortfalls reaching higher up the capital stack


Sources: Jefferies and Intex Solutions, Inc.

## 'Amazing Shrinking Denominator' Effect to Push Delinquency Rate Higher

- Fixed CMBS delinquency rate skewed higher by technical and fundamental factors
- Fundamental: Increasing Numerator (Delinquent Loans)
- Recession, aggressive underwriting, loan maturities, lack of capital drive up delinquencies
- Technical: Decreasing Denominator
- No new CMBS issuance since July 2008 and continuing through late-2009
- Normal amortization and loan payoffs at maturity will cause further deterioration in the denominator
- Loans with a current balance of $\$ 39$ billion scheduled to mature in 2010
- Factoring in projected declines in outstanding universe due to loan payoffs and amortization only in 2009
- Assume average YTD '09 month-over-month increase in delinquent loans of $\$ 2.3$ billion,
- Delinquency rate climbs to $10+\%$ by YE10

Rising Delinquency Contributors: Recent Vintages

| Fixed-Rate CMBS Conduit/Fusion WA Delinquencies by Vintage (8/10) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Orig <br> Bal <br> (\$B) | Curr. <br> Bal. <br> (\$B) | 30+ <br> Del. <br> (\%) | 60+ <br> Del. <br> (\%) | $90+$ <br> Del. <br> (\%) | $\begin{gathered} \text { FC } \\ (\%) \end{gathered}$ | REO <br> (\%) | Total Del. (\%) | Cum. <br> Loss <br> (\%) | Curr. \& SS (\%) | Watchlisted Loans (\%) |
| 1996 | 0.38 | 0.31 | 0.00\% | 0.00\% | 0.33\% | 4.51\% | 1.06\% | 6.37\% | 3.03\% | 0.81\% | 21.33\% |
| 1997 | 2.10 | 1.81 | 0.41\% | 0.00\% | 0.35\% | 0.46\% | 1.09\% | 2.30\% | 2.77\% | $5.96 \%$ | 19.63\% |
| 1998 | 6.54 | 5.48 | 0.24\% | 0.18\% | 3.17\% | 2.60\% | 2.32\% | 8.51\% | 2.14\% | 6.49\% | 17.97\% |
| 1999 | 6.22 | 4.41 | 0.72\% | 0.84\% | 9.88\% | 3.67\% | 3.97\% | 19.12\% | 2.19\% | 6.82\% | 19.32\% |
| 2000 | 7.94 | 4.88 | 3.12\% | 2.03\% | 10.02\% | 4.51\% | 7.32\% | 2704\% | 2.42\% | 13.95\% | 25.93\% |
| 2001 | 27.62 | 23.09 | 0.50\% | 0.32\% | 2.69\% | 1.59\% | 1.12\% | 6.26\% | 1.83\% | 2.19\% | 24.99\% |
| 2002 | 29.99 | 25.27 | 0.56\% | 0.30\% | 1.37\% | 0.56\% | 1.03\% | 3.83\% | 1.14\% | 1.16\% | 20.22\% |
| 2003 | 48.28 | 37.44 | 0.73\% | 0.38\% | 1.38\% | 0.99\% | 0.64\% | 4.12\% | 0.55\% | 4.18\% | 19.28\% |
| 2004 | 74.31 | 59.19 | 0.96\% | 0.29\% | 1.99\% | 1.54\% | 0.75\% | 5.54\% | 0.48\% | 4.32\% | 21.46\% |
| 2005 | 157.35 | 120.03 | 1.13\% | 0.86\% | 3.57\% | 1.23\% | 0.70\% | 7.66\% | 0.56\% | 5.69\% | 23.41\% |
| 2006 | 204.47 | 158.49 | 0.93\% | 0.54\% | 3.97\% | 1.92\% | 1.18\% | 8.55\% | 0.50\% | 3.20\% | 26.76\% |
| 2007 | 250.47 | 191.39 | 0.99\% | 1.12\% | 4.40\% | 3.91\% | 1.00\% | 11.47\% | 0.34\% | 5.11\% | 25.92\% |
| 2008 | 16.23 | 10.57 | 1.19\% | 0.51\% | 6.08\% | 2.31\% | 1.70\% | 11.78\% | 0.49\% | 2.48\% | 27.48\% |
| Total | 831.91 | 642.37 | 0.96\% | 0.73\% | 3.65\% | 2.27\% | 1.04\% | 8.70\% | 0.58\% | 4.41\% | 24.50\% |

Source: Jefferies \& Ca., Intex Solutions, Inc.


## Delinquency Rates by Top 10 States

- California: Maguire Properties forfeiture of office highlights CA woes: $\$ 95 \mathrm{~b}$ of fixed-rate CMBS loans in state
- Texas and Florida: High unemployment rates and some of the highest foreclosure rates in the U.S. hurt multifamily
- 5,297 Loans outstanding in Texas
- 3,840 Loans outstanding in Florida


Sources: Jefferies and Intex Solutions, Inc.


Sources: Jefferies \& Co. and Intex Solutions, Inc.


The Refinance Conundrum: CMBS Fixed- and Floating-Rate Loan Maturities

CMBS Loan Maturities "Manageable" But Overall Volume Overwhelming


Sources. Jefferies and Intex Solutions, Inc.


Sources. Jefferies and Intex Solutions. Inc.

- Despite CMBS maturities of <\$60 billion annually over next 5 years, overall commercial real estate loan maturities (banks, insurance companies and CMBS) loom large at $\$ 200$ to $>\$ 300$ billion annually between 2010 and 2013.

CMBS Spreads / Balance-Sheet Issues Improve, Still No 'Real' Conduit lending

| Commercial Mortgage Spreads to Treasurys |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Vintage | Multifamily | Retail | Office | Industrial | Hotel |
| 1999 | 195 | 233 | 223 | 223 | 298 |
| 2000 | 194 | 228 | 221 | 221 | 302 |
| 2001 | 205 | 239 | 230 | 230 | 286 |
| 2002 | 166 | 205 | 188 | 188 | 261 |
| 2003 | 143 | 172 | 149 | 149 | 252 |
| 2004 | 118 | 144 | 123 | 123 | 236 |
| 2005 | 107 | 124 | 112 | 112 | 194 |
| 2006 | 115 | 129 | 119 | 119 | 192 |
| 2007 | 315 | 315 | 315 | 315 | 378 |
| 2008 | 1200 | 1300 | 1200 | 1200 | 1350 |
| 2009 | 1200 | 1300 | 1200 | 1200 | 1350 |
| Source: Jefferies |  |  |  |  |  |

Source: Jefferies
Historical Commercial Mortgage
Financing Spreads by Asset Type


Source: Jefferies

- Life Companies lending on high quality, conservatively underwritten assets with cap rates and mortgage rates of $<7 \%$ (as of 1Q10)


## Ability to Refinance Depends on Vintage/Seasoning

- Majority of loans maturing in 2010 were originated in 2000 and 2005
- Amortizing
- Higher loan coupons at origination than today
- Higher cap rates at origination and thus equity build-up as cap rates much lower today
- \$9.2B of fixed rate10-year 2000 vintage loans mature in 2010
- \$15.6B of fixed rate5-year 2005 vintage loans mature in 2010 - not as well protected as 2000 vintage loans

| Average Commercial Mortgage Fixed Rate Coupons and Capitalization Rates by Vintage |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Vintage | Avg. <br> Coupon (\%) | Avg. <br> Cap Rate (\%) | Avg. <br> Loan Spread (BPs) | Avg. <br> Pool LTV (\%) | Avg. <br> 1998 |  |
| 8.25 | 8.56 | 300 | 69.3 | 5.25 |  |  |
| 1999 | 7.99 | 8.45 | 234 | 69.2 | 5.64 |  |
| 2000 | 8.35 | 8.64 | 233 | 69.4 | 6.02 |  |
| 2001 | 7.38 | 8.41 | 238 | 68.7 | 5.00 |  |
| 2002 | 6.61 | 7.98 | 202 | 68.9 | 4.59 |  |
| 2003 | 5.73 | 7.67 | 173 | 66.8 | 4.00 |  |
| 2004 | 5.75 | 7.25 | 149 | 68.9 | 4.26 |  |
| 2005 | 5.58 | 6.79 | 130 | 68.7 | 4.28 |  |
| 2006 | 6.14 | 6.36 | 135 | 68.0 | 4.79 |  |
| 2007 | 7.91 | 5.74 | 328 | 69.1 | 4.63 |  |
| 2008 | 10.00 | 5.36 | 635 | 66.8 | 3.65 |  |

Saurces: Jefferies, Trepp, NCREIF. *Across all property types.
Jefferies 类

## Refinance Activity

| Status of Fixed-Rate Loans with 2010 Final Maturities (as of 06/10) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | aturities |  |
| Status | Loan Count | Balance (\$) | 1H10 <br> (\%) | $\begin{array}{r} \hline \text { FY09 } \\ (\%) \end{array}$ | $\begin{array}{r} \hline \text { FY08 } \\ (\%) \end{array}$ |
| All 1H10 Maturities | 1,957 | 17,458,706,456 |  |  |  |
| Loans Paid-Off | 1,472 | 12,611,288,565 | 72.2\% | 62.9\% | 82.0\% |
| Full Payoff at Maturity | 643 | 5,184,006,366 |  |  |  |
| Payoff Prior to Maturity | 679 | 6,442,544,333 |  |  |  |
| Payoff with Prepay. Penalty | 150 | 984,737,866 |  |  |  |
| Loans Liquidated | 156 | 1,340,994,294 | 7.7\% | 3.2\% | 4.4\% |
| Disposition | 109 | 966,648,980 |  |  |  |
| Discounted Payoff | 47 | 374,345,314 |  |  |  |
| Loans Outstanding Post Maturity | 329 | 3,506,423,597 | 20.1\% | 33.9\% | 13.6\% |
| Loans Extended/Modified | 59 | 590,052,440 |  |  |  |
| Loans Matured \& Non-performing | 258 | 2,706,991,157 |  |  |  |
| Loans Matured \& Performing | 9 | 197,850,000 |  |  |  |
| Loans ARD | 3 | 11,530,000 |  |  |  |

Source: Jefferies, Intex Solutions, Inc.

## Largest Fixed-Rate CMBS Loans Maturing in 2010

| Fixed-Rate Conduit/Fusion Loans $\boldsymbol{>}$ \$150 Million Maturing in 2010 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Deal | Loan | Orig. Bal. (\$MM) | Curr. Bal. (\$MM) | State | Prop. <br> Type | Orig. Bln Term | $\begin{gathered} \text { MR. } \\ \text { DSCR } \end{gathered}$ | MR. NCF | MR Fin. Date |
| CD06CD2 | Villas Parkmerced | 550.00 | 550.00 | CA | MF | 60 | 1.10 | 34,606,100 | 9/30/2009 Stellar Mgt \& Rockpoint Grp |
| JPC05LD4 | Regency Portfolio | 349.73 | 317.42 | - | RT | 60 | 1.92 | 15,391,000 | 6/30/2009 Macquarie et al |
| LBUB05C5 | Providence Place | 273.60 | 258.53 | Rl | RT | 60 | 1.77 | 23,490,100 | 9/30/2008 GGP |
| GCC05GG5 | Lynnhaven Mall | 251.00 | 233.88 | VA | RT | 60 | 1.24 | 20,202,500 | 3/31/2008 GGP |
| MLT05MC1 | The Westchester Mall | 200.00 | 200.00 | NY | RT | 60 | 1.79 | 44,128,000 | 6/30/2009 SPG |
| MLT05C01 | The Westchester Mall | 100.00 | 100.00 | NY | RT | 60 | 1.79 | 44,128,000 | 6/30/2009 SPG |
| LBUB06C6 | Reckson Portfolio I | 196.07 | 196.07 | - | OF | 60 | 2.50 | 8,067,350 | 6/30/2009 NA |
| LBUB05C7 | Reckson Portfolio I | 196.07 | 196.07 | - | OF | 60 | 2.15 | 12,047,700 | 9/30/2009 Reckson Australia Op. Co. et al |
| JPC05LD5 | 2 Grand Central Tower | 190.00 | 190.00 | NY | OF | 60 | 2.12 | 15,401,100 | 9/30/2009 Two Grand Central Tow er |
| MSC04HQ3 | Arundel Mills | 187.00 | 187.00 | MD | RT | 84 | 3.16 | 27,598,100 | 9/30/2005 The Mills LP et al |
| JPC05C13 | DRA-CRT Portfolia I | 180.90 | 180.90 | - | OF | 60 | 1.67 | 8,178,020 | 6/30/2006 DRA - CRT |
| WBC04C14 | Park Place Mall | 190.00 | 176.44 | AZ | RT | 66 | - | 13,667,300 | 9/30/2008 GGP |
| BACM0503 | Ridgedale Center | 190.00 | 175.74 | MN | RT | 60 | 1.20 | 3,621,120 | 3/31/2009 Ridgedale Center, LLC |
| CSM06C01 | Saint Louis Galleria | 180.00 | 167.25 | MO | RT | 60 | 1.88 | 5,024,790 | 3/31/2009 Saint Louis Galleria LLC |
| MLT05CP1 | Highw oods Portfolio 56 | 160.00 | 160.00 | - | OF | 60 | 1.13 | 9,081,010 | 6/30/2009 Capital Partners |
| GECC05C3 | Oakland City Center | 150.00 | 150.00 | CA | OF | 60 | 3.24 | 22,836,400 | 12/31/2008 Shorenstein Realty Inv et al |

Saurce: Jefferies \& Co. Intex Solutions. Inc. (as of 01/10)

# CRE Loan Historical and Projected Default and loss Seasoning Curves 

## Historical CMBS Loan Defaults and Losses Modest to Date

- $10.1 \%$ to $11.6 \%$ cumulative defaults on ' 95 -'97 vintage fixed-rate CMBS pools
- $2.7 \%$ to $3.7 \%$ cumulative losses on ' $95-97$ vintage fixed-rate CMBS pools
- Minimal defaults in years 1-3, climbing in years 4-7, then stabilizing/falling thereafter
- Losses follow by 12 to 18 months, longer in stressed real estate/financing markets

Fixed-Rate Commercial Mortgage Default and Loss Rates - All Property Types by Vintage


Sources. Jefferies and Intex Solutions, Inc. As of 03/09

## Worst-Case Historical Scenario...Breaking the "Historicals"

- Late-1980s/early-1990s represent worst CRE period since the Great Depression
- CRE supply glut meets recession
- 1986: 10.9\% cumulative losses
- 1990: 11.8\% cumulative losses
- Current cycle expected to exceed previous high in cumulative losses

Commercial Mortgage Losses (1978-1994)


Sources. Intex Solutions, Inc., Various studies conducted by Howard Esaki, Masumi Goldman, Steven L'Heureux, and Mark Snyderman.

## Even Historical CMBS Losses of 2.7\% to 3.7\% Hit Recent-Vintage BBB-

- Defaults would have to rise to $\mathbf{6 0 \%}$ before principal loss on SS AAA bonds ( $\mathbf{5 0 \%}$ loss severity)
- Historical loss of $3.7 \%$ hits BBB- bonds with $3.11 \%$ average credit enhancement
- '04-'08 BBB- /lower-rated bonds-levered and binary risk, interest shortfalls stress credit IO relative value

| Fixed-Rate CMBS Credit Enhancement (\%) |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | SS AAA | Jr. AAA | AA | A | BBB | BBB- | BB | B |
| 1996 |  | 31.5 | 25.3 | 19.7 | 14.8 | 12.6 | 7.9 | 3.3 |
| 1997 |  | 30.3 | 24.1 | 18.5 | 13.3 | 11.5 | 6.0 | 3.0 |
| 1998 |  | 28.8 | 23.7 | 18.7 | 12.6 | 10.9 | 5.8 | 3.2 |
| 1999 |  | 27.0 | 22.3 | 17.3 | 12.3 | 10.5 | 6.1 | 2.9 |
| 2000 |  | 22.2 | 17.8 | 13.7 | 9.6 | 8.3 | 4.5 | 2.1 |
| 2001 |  | 21.0 | 17.4 | 12.9 | 9.1 | 8.0 | 4.6 | 2.4 |
| 2002 |  | 20.7 | 16.1 | 12.3 | 8.1 | 7.1 | 4.4 | 2.2 |
| 2003 |  | 16.5 | 13.7 | 10.0 | 6.7 | 5.4 | 3.5 | 1.9 |
| 2004 |  | 13.7 | 11.3 | 8.3 | 5.0 | 3.7 | 2.9 | 1.7 |
| 2005 | 30.0 | 12.9 | 10.5 | 7.9 | 4.6 | 3.4 | 2.6 | 1.7 |
| 2006 | 30.0 | 12.0 | 10.0 | 7.5 | 4.2 | 3.1 | 2.4 | 1.5 |
| 2007 | 30.0 | 12.1 | 10.0 | 7.6 | 4.3 | 3.2 | 2.5 | 1.6 |
| 2008 | 30.0 | 13.5 | 11.3 | 8.5 | 5.2 | 4.1 | 3.1 | 2.2 |

Sources: Jefferies, Intex Solutions, Inc.: and Commercial M ortgage Alert.

## CRE Default \& Loss Vectors: Base Stress

- Base-Case Stress Scenario Defined:
- Historical Experience of CRE loans originated from '72-'07
- Accounts for full economic/CRE cycles
- Historical Defaults and Losses
- Cumulative Default Rate: 13.65\%
- Cumulative Loss Rate: 3.76\%

Base-Case Scenario

| Base-Case Scenario |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Fixed-Rate Commercial Mortgage Pools: The Experience of 19722007 Vintage Loans |  |  |  |  |
| Year | CDR (\%) | Rem. Balance (\%) | Loss by Year of Seasoning (\%) | Cumulative Loss (\%) |
| 0 | 0.25 | 99.75 | 0.00 | 0.00 |
| 1 | 0.94 | 98.81 | 0.00 | 0.00 |
| 2 | 1.31 | 97.50 | 0.10 | 0.10 |
| 3 | 1.43 | 96.07 | 0.33 | 0.43 |
| 4 | 1.56 | 94.51 | 0.40 | 0.83 |
| 5 | 1.54 | 92.97 | 0.46 | 1.29 |
| 6 | 1.58 | 91.39 | 0.43 | 1.71 |
| 7 | 1.14 | 90.25 | 0.21 | 1.92 |
| 8 | 1.03 | 89.21 | 0.58 | 2.50 |
| 9 | 0.78 | 88.43 | 0.39 | 2.89 |
| 10 | 0.88 | 87.56 | 0.33 | 3.22 |
| 11 | 0.63 | 86.92 | 0.25 | 3.47 |
| 12 | 0.57 | 86.35 | 0.29 | 3.76 |
| Total | 13.65 |  | 3.76 |  |

Sources. Intex Solutions, Inc., Various studies conducted by Howard Esaki,
Masumi Goldman, Steven L'Heureux, and Mark Snyderman

Commercial Real Estate Default \& Loss Vectors: Moderate-Stress

- Moderate Stress Scenario Defined
- '80 to '90 vintages
- Mortgage performance from ' $80-$ '00
- Economic Environment
- 3 recessions ( $9 / 74$ to $3 / 75,6 / 80$ to $12 / 80$, $12 / 90$ to $3 / 91$ )
- Prolonged periods of growth ( $6 / 75$ to $3 / 80$, $12 / 80$ to $9 / 90,6 / 91$ to $12 / 07$ )
- Commercial Real Estate Environment
- Wide range of cap rates: $6.65 \%$ to $9.62 \%$
- Historical Defaults and Losses
- Cumulative Default Rate: 20.36\%
- Cumulative Loss Rate: 7.06\%

| Moderate Stress Scenario |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Fixed-Rate Commercial Mortgage Moderate-Stress Scenario: The Experience of 1980-1990 Vintage Loans |  |  |  |  |
| Year | CDR (\%) | Rem. Balance (\%) | Loss by Year of Seasoning (\%) | Cumulative Loss (\%) |
| 0 | 0.25 | 99.75 | 0.00 | 0.00 |
| 1 | 0.97 | 98.77 | 0.00 | 0.00 |
| 2 | 1.92 | 96.86 | 0.10 | 0.10 |
| 3 | 2.13 | 94.73 | 0.35 | 0.45 |
| 4 | 2.51 | 92.21 | 0.70 | 1.15 |
| 5 | 2.89 | 89.32 | 0.78 | 1.93 |
| 6 | 3.56 | 85.76 | 0.90 | 2.83 |
| 7 | 1.83 | 83.93 | 1.04 | 3.87 |
| 8 | 1.56 | 82.37 | 1.23 | 5.10 |
| 9 | 0.63 | 81.73 | 0.65 | 5.75 |
| 10 | 1.34 | 80.40 | 0.58 | 6.33 |
| 11 | 0.56 | 79.84 | 0.23 | 6.57 |
| 12 | 0.21 | 79.64 | 0.49 | 7.06 |
| Total | 20.36 |  | 7.06 |  |

Sources. Intex Solutions, Inc., Various studies conducted by Howard Esaki,
Masumi Goldman, Steven L'Heureux, and Mark Snyderman.

Jefferies 粤

## CRE Default and Loss Vectors: Moderate to Severe Stress

- Moderate to Severe Stress Scenario Defined
- '84 to '87 vintages
- Economic/CRE Environment
- '80s CRE boom due to ' 81 Economic Recovery Act
- Tax Reform Act of '86 reduces demand
- Early'90s recession
- Historical Defaults and Losses
- Cumulative Default Rate: 31.6\%
- Cumulative Loss Rate: 9.3\%

Moderate-Severe Stress Scenario (Adjusted)

| Year | CDR (\%) | Rem. Balance (\%) | Loss by Year of Seasoning <br> (\%) | Cumulative Loss (\%) |
| :---: | :---: | :---: | :---: | :---: |
| 0 | 0.00 | 100.00 | 0.00 | 0.00 |
| 1 | 0.92 | 99.08 | 0.00 | 0.00 |
| 2 | 2.28 | 96.80 | 0.28 | 0.28 |
| 3 | 2.14 | 94.66 | 0.68 | 0.96 |
| 4 | 3.25 | 91.41 | 0.89 | 1.85 |
| 5 | 5.82 | 85.59 | 0.95 | 2.80 |
| 6 | 10.30 | 75.29 | 0.98 | 3.78 |
| 7 | 2.47 | 72.82 | 1.59 | 5.37 |
| 8 | 1.31 | 71.51 | 1.75 | 7.12 |
| 9 | 0.24 | 71.27 | 0.85 | 7.97 |
| 10 | 2.32 | 68.95 | 0.60 | 8.57 |
| 11 | 0.23 | 68.72 | 0.25 | 8.82 |
| 12 | 0.31 | 68.41 | 0.50 | 9.32 |
| Total | 31.59 |  | 9.32 |  |

Sources. Intex Solutions, Inc., Various studies conducted by Howard Esaki, Masumi Goldman, Steven L'Heureux, and Mark Snyderman.

## CRE Default and Loss Vectors: Severe Stress

- Severe Stress Scenario Defined
- '86 experience with '07-'08 loss levels
- Historical Defaults and Losses
- Cumulative Default Rate: 31.6\%
- Cumulative Loss Rate: $14.22 \%$

Ultra-Severe Stress Scenario

| Ultra-Severe Stress Scenario |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Fixed-Rate <br> Plus <br> Year | CDR (\%) | Rem. <br> Balance <br> $(\%)$ | Loss by Year <br> of Seasoning <br> (\%) | Cumulative <br> Loss (\%) |
| 0 | 0.00 | 100.00 | 0.00 | 0.00 |
| 1 | 0.92 | 99.08 | 0.41 | 0.41 |
| 2 | 2.28 | 96.80 | 1.03 | 1.44 |
| 3 | 2.14 | 94.66 | 0.96 | 2.40 |
| 4 | 3.25 | 91.41 | 1.46 | 3.86 |
| 5 | 5.82 | 85.59 | 2.62 | 6.48 |
| 5 | 10.30 | 75.29 | 4.64 | 11.12 |
| 6 | 2.47 | 72.82 | 1.11 | 12.23 |
| 7 | 1.31 | 71.51 | 0.59 | 12.82 |
| 8 | 0.24 | 71.27 | 0.11 | 12.93 |
| 9 | 2.32 | 68.95 | 1.04 | 13.97 |
| 10 | 0.23 | 68.72 | 0.11 | 14.08 |
| 11 | 0.31 | 68.41 | 0.14 | 14.22 |
| 12 | 31.59 |  | 14.22 |  |
| Total |  |  |  |  |

Sources. Intex Solutions, Inc., Various studies conducted by Howard Esaki,
Masumi Goldman, Steven L'Heureux, and Mark Snyderman

Rating Agency CMBS Actions

## CMBS Bond Ratings Change Course: Downgrades Lead Upgrades

- Ten years of historically high upgrade/downgrade ratios
- High levels of defeasance
- Strong pool performance
- Rising property valuations
- Amortization
- As of 2008 inverted upgrade/downgrade ratios going forward
- Reduced credit enhancement on more recent CMBS
- Reduced defeasance
- Growing volume of watch listed loans
- Refinance risk on 2005-2007 vintage loans
- Inability to reach pro-forma cash-flow assumptions
- Changes to rating agency models

CMBS Upgrade/Downgrade Ratios by Year of Ratings Action


Sources: S\&P: Fitch and Moody's

## S\&P Proposed Changes in Conduit/Fusion CMBS Rating Methodology

- Property evaluation criteria unchanged
- Criteria updates
- Established new 'AAA' CE levels to withstand declining commercial-property income
- CE target of $20 \%$ deemed sufficient to allow AAAs to withstand extreme economic downturn without defaulting
- Refined cap rates for greater specificity and consistency from one pool to another
- Introduced a standardized method to assess loan and geographic concentrations
- Employed a forward-looking CRE forecast to determine the expected loss for the transaction
- Refined surveillance methodology for projected losses
- S\&P's new model projects losses of $\mathbf{2 0 \%}$ or more on most ' 07 conduit/fusion pools;
- $25 \%, 60 \%$ and $90 \%$ of most senior bonds within the ' 05 , ' 06 and ' 07 vintages respectively may be downgraded
- '00 to '04 CMBS bonds will see downgrades to a lesser degree
- The change in rating methodology affected the ratings outlooks on 3,563 tranches from 217 transactions

| S\&P Dow ngraded Super Senior Classes in 2009 |  |
| :--- | ---: |
| Class | \# of Dow ngrades |
| A1-A | 77 |
| A1 | 1 |
| A2 | 5 |
| A3 | 22 |
| A4 | 68 |
| A5 | 11 |
| AAB | 5 |

Source: Standard and Poors

## Moody's and Fitch: More Gradual Approach Than S\&P, Same Ultimate Rating

- Moody's
- Expected loss estimate of 5\% on average for 2006-2008 conduit and fusion deals
- "Super-duper Aaa-rated classes for late vintage deals, with $30 \%$ credit enhancement and a six times multiple of current expected loss, are unlikely to experience downgrades. "

June 2009, Sector Comment - Moody's Structured Finance - Update To February U.S. CMBS Ratings Sweep: Super-Duper Aaa's Unlikely to Experience Downgrades

- Fitch
- Completed review of 78, 2006-2008 vintage CMBS transactions (\$230.4 billion)
- Affirmed 80\% (\$186.1 billion) of the tranches and downgraded 20\% (\$44.3 billion)
- "Fitch affirmed all 492 super senior 'AAA' classes in its rated portfolio (\$164 billion), along with seven junior 'AAA' classes ( $\$ 1.1$ billion) and 88 mezzanine 'AAA' classes ( $\$ 17.6$ billion)."

16 Oct 2009 , Fitch Completes Analysis on 2006-2008 Fixed Rate U.S. CMBS

Jefferies ${ }^{\text {K }}$

CMBS Master Servicers Face Downgrade Risk

| Details on Largest Master Servicers |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Fitch |  | S\&P |  |
| Master Servicer | Curr. Rating | MR Action | Curr. Rating | MR Action |
| Berkadia Comm. Mort. LLC | CMS2+ | Affirmed 11/12/09 | Strong | Affirmed 12/11/2009 |
| Wells Fargo Bank, N.A. | CMS2- | Downgraded 8/12/10 | Above Avg. | Downgraded 3/25/2010 |
| Midland Loan Services, Inc. | CMS1 | Affirmed 9/22/2009 | Strong | Affirmed 4/7/2009 |
| Bank of America Merrill Lynch | CMS2+ | Affirmed 11/12/2009 | Strong | Affirmed 9/17/2007 |
| KeyBank Real Estate Capital | CMS1 | Affirmed 9/18/2009 | Strong | Affirmed 2/9/2009 |
| GEMSA Loan Services | CMS1- | Affirmed 12/8/2009 | Strong | Affirmed 8/14/2008 |
| Prudential Asset Resources | CMS2 | Affirmed 8/19/2010 | Above Avg. | Raised 3/08/2010 |
| Bank of New York | CMS3+ | Affirmed 6/16/2010 | Average | Affirmed 3/5/2010 |
| Pacific Life | CMS2+ | Affirmed 7/22/2010 | Above Avg. | Affirmed 12/23/2008 |

Sources. Intex Solutions: Inc.: FitchRatings: Moody's Investors Service: Standard \& Poor's: Bloomberg *Unlisted

CMBS Special Servicers Face Downgrade Risk

| Details on Largest Special Servicers |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Fitch | S\&P |  |
| Special Servicer | Curr. Rating | MR Action | Curr. Rating | MR Action |
| LNR REFSG | CSS2 | Affirmed 8/27/2010 | Strong | Affirmed 3/16/2010 |
| CWCapital Asset Mgmt., LLC | CSS1- | Downgraded 9/22/2010 | Strong | Affirmed 7/22/09 |
| C-III Asset Management LLC | CSS1- | Affirmed 6/22/2010 | Strong | Affirmed 12/17/2008 |
| Midland Loan Services, Inc. | CSS1 | Affirmed 9/22/2009 | Strong | Affirmed 4/7/2009 |
| Berkadia Comm. Mort. LLC | CSS2 | Upgraded 11/12/09 | Strong | Affirmed 12/11/2009 |
| J.E. Robert Co. | CSS2+ | Downgraded 2/18/2010 | Strong | Affirmed 5/11/2009 |
| ING Clarion Capital Loan Services | CSS2+ | Affirmed 7/31/2008 | Above Avg. | Assigned 8/26/2009 |
| KeyBank Real Estate Capital | CSS2+ | Affirmed 9/18/2009 | Strong | Affirmed 2/9/2009 |
| Bank of America Merrill Lynch | CSS2 | Upgraded 11/12/09 | Above Avg. | Raised 1/26/2009 |
| Wells Fargo Bank, N.A. | CSS2- | Upgraded 8/12/10 | Above Avg. | Affirmed 5/19/2009 |

Saurces. Intex Salutions, Inc., FitchRatings, Moody's Investors Service: Standard \& Poor's, Bloomberg

The Commercial Real Estate Space Markets

## Constrained Capital and Uncertain Valuations Slash CRE Transactions

- Commercial-property transactions down sharply
- $-73 \%$ in 2008
- $-74 \%$ in 2009 (dollar volume)
- Reduced credit availability
- Deteriorating fundamentals
- 2004-2007: Surge in property transactions
- 2007: Peak in transaction volume,
- $\quad \$ 513$ billion in volume via 7,274 transactions
- Driven by public to private mega deals
- 2007 CRE investors now underwater

CRE Transaction Volume (All Asset Types)


Sources: Jefferies and RCA * as of 08110

## ‘05-’07 Public-to-Private M\&A Activity Suggests Key Borrowers Underwater

- Massive shift in CRE from public to private hands at the 'top of the market' in valuations
- 2005: $\$ 14.8$ billion through 9 transactions
- 2006: $\$ 136.1$ billion through 41 transactions
- 2007: $\$ 138.7$ billion through 27 transactions

| M\&A Activities 2005-2007 |  |  |  |
| :---: | :---: | :---: | :---: |
| Acquirer | Target | Acquirer Type | Total Value (\$B) |
| 2005 |  |  |  |
| ING Clarion | Gables Residential Trust | Private Equity Joint Venture | 4.90 |
| Prologis | Catellus Development Corp. | Public REIT | 3.82 |
| DRAAdvisors | Capital Autom otive REIT | Investment Advisor | 1.80 |
| The Lightstone Group | Prime Group Realty Trust | Private Real Estate Company | 1.50 |
| Camden Property Trust | Summit Property Group | Public REIT | 1.10 |
| 2006 |  |  |  |
| Blackstone Group | Equity Office Properties Trust | Private Equity | 39.00 |
| Fertitta Colony Partners | Station Casinos | Private Equity | 8.80 |
| Blackstone Group, Brookfield Prop. Co. | Trizec Properties, Inc. | JV-Private Equity \& REOC | 6.50 |
| Developers Diversified Realty Corp. | Inland Retail Real Estate Trust Inc. | JV-Private REIT | 6.20 |
| SL Green Realty Corp. | Reckson Associates Realty Corp. | Public REIT | 6.00 |
| 2007 |  |  |  |
| Apollo Management, TPG Inc. | Harrah's Entertainment | Private Equity | 28.00 |
| Blackstone Group | Hilton Hotels Corp. | Private Equity | 26.00 |
| Tishman Speyer, Lehman Brothers | Archstone-Smith | Private C0/Brokerage | 22.00 |
| SPG, Farallon | Mills Corp. | Public REIT | 7.90 |
| Morgan Stanley Real Estate | CNL Hotel \& Resort | Private Equity | 6.70 |

## NCREIF Unleveraged CRE Equity Returns for all Property Types

- Annual returns peaked in 2005
- Total Return: 18.72\%
- Income Return: 6.59\%
- Capital Appreciation: 12.13\%
- 2009 annualized total returns are down 213\% from the peak
- Total Return: -21.12\%
- Income Return: 5.91\%
- Capital Appreciation: -27.03\%
(as of 4Q09)



## NCREIF Unleveraged Returns by Property Type as of 2Q10





Unlevered Equity Returns on Retail Investment


Jefferies

## NCREIF Unleveraged Returns by Property Type as of 2Q10

Unlevered Equity Returns on Hotel In vestment


Office Property Market Statistics

| National Office Market Fundamentals |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | $\begin{gathered} \text { NRA } \\ (\mathrm{SF} \times 1000) \end{gathered}$ | Completions (SFx1000) | Vac. Rate <br> (\%) | Net <br> Absorption (SFx 1000) | Gross <br> Asking Rent (\$/SF) | Net <br> Asking Rent (\$/SF) | NCREIF <br> TRR <br> (\%) | Cap. Rate (\%) | CMBS <br> Del. <br> Rate <br> (\%) |
| 2000 | 3,049,909 | 91,106 | 8.60 | 111,011 | 24.10 | 17.84 | 13.42 | 8.30 | 0.35 |
| 2001 | 3,137,792 | 87,883 | 14.20 | -96,294 | 24.91 | 18.18 | 6.08 | 8.76 | 0.51 |
| 2002 | 3,210,048 | 72,256 | 16.50 | -12,831 | 23.15 | 16.78 | 2.76 | 8.79 | 0.78 |
| 2003 | 3,251,520 | 41,472 | 16.80 | 25,013 | 22.19 | 16.00 | 5.56 | 8.22 | 1.79 |
| 2004 | 3,284,034 | 32,514 | 15.40 | 72,948 | 22.03 | 16.13 | 11.52 | 7.45 | 1.42 |
| 2005 | 3,321,602 | 37,568 | 13.60 | 89,871 | 22.41 | 16.38 | 18.19 | 6.49 | 0.92 |
| 2006 | 3,375,705 | 54,103 | 12.60 | 82,401 | 23.79 | 17.54 | 17.93 | 5.99 | 0.42 |
| 2007 | 3,442,669 | 66,964 | 12.50 | 58,371 | 26.33 | 19.01 | 20.39 | 5.19 | 0.23 |
| 2008 | 3,521,876 | 79,207 | 14.00 | 19,422 | 25.79 | 19.61 | -7.09 | 5.01 | 0.79 |
| 2009 | 3,572,692 | 50,816 | 16.30 | -41,113 | 23.97 | 18.87 | -20.55 | 6.74 | 3.88 |
| 2010** | 3,574,186 | 13,656 | 16.70 | -496 | 23.80 | 18.39 | 3.37 | 7.01 | 6.38 |

[^1]| National Retail Market Fundamentals |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Shopping Ce <br> Stock $(\mathrm{SF} \times 1000)$ | nter Supply <br> Completions $(\mathrm{SFx} 1000)$ | Avail Rate (\%) | Net <br> Absorption (SFx 1000) | Gross <br> Asking Rent (\$/SF) | Net Asking Rent (\$/SF) | NCREF <br> Total Return (\%) | Cap. Rate (\%) | CMBS <br> Del. <br> (\%) |
| 2000 | 1,431,017 | 40,351 | 6.88 | 50,996 | na | na | 7.55 | 8.39 | 0.63 |
| 2001 | 1,463,693 | 32,678 | 8.20 | 11,040 | na | na | 6.58 | 8.72 | 1.39 |
| 2002 | 1,486,964 | 23,276 | 8.45 | 17,621 | na | na | 13.10 | 8.59 | 1.70 |
| 2003 | 1,506,459 | 19,500 | 8.37 | 19,047 | na | na | 16.18 | 8.12 | 1.72 |
| 2004 | 1,527,806 | 21,358 | 7.96 | 25,889 | 13.14 | 13.13 | 21.26 | 7.28 | 0.99 |
| 2005 | 1,554,063 | 26,263 | 7.65 | 28,983 | 13.62 | 14.59 | 18.65 | 6.46 | 0.54 |
| 2006 | 1,581,756 | 27,705 | 7.83 | 22,683 | 14.55 | 15.93 | 12.73 | 6.09 | 0.25 |
| 2007 | 1,613,084 | 31,326 | 8.79 | 13,387 | 16.75 | 16.60 | 12.88 | 5.69 | 0.25 |
| 2008 | 1,640,295 | 27,218 | 10.64 | -5,410 | 16.75 | 17.23 | -3.98 | 5.85 | 1.38 |
| 2009 | 1,653,293 | 13,003 | 12.50 | -19,181 | 15.67 | 16.57 | -11.40 | 6.73 | 5.17 |
| 2010* | 1,644,010 | 2,130 | 13.10 | -3,449 | 14.39 | 16.25 | 2.81 | 6.73 | 6.59 |

Source: CBRE Econometric Advisors *As of 2Q10

## Multifamily Property Market Statistics

| National Multifamily Market Fundamentals |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Inventory (Units) | Completions (Units) | Net Absorption (Units) | Avg. <br> Vac. <br> Rate <br> (\%) | Avg. Rent per Unit (\$) | Avg. Rent per SF (\$) | Avg. <br> Rev. per Unit (\$) | NCREIF <br> TRR <br> (\%) | NCREIF Implied Cap. Rate (\%) | CMBS <br> Del. <br> Rate <br> (\%) |
| 2000 | 12,472,270 | 221,707 | 237,936 | 4.30 | 1,342.98 | 0.92 | 1,286.71 | 12.41 | 8.15 | 0.51 |
| 2001 | 12,670,882 | 198,612 | -514 | 4.60 | 1,248.48 | 0.96 | 1,183.68 | 9.06 | 7.97 | 0.83 |
| 2002 | 12,865,371 | 194,489 | 26,001 | 5.70 | 1,234.54 | 0.96 | 1,155.53 | 8.49 | 7.02 | 1.14 |
| 2003 | 13,043,674 | 178,303 | 136,912 | 6.40 | 1,235.27 | 0.94 | 1,152.26 | 2.25 | 6.19 | 2.03 |
| 2004 | 13,211,419 | 167,745 | 229,306 | 6.00 | 1,309.89 | 0.97 | 1,231.17 | 12.45 | 5.85 | 2.45 |
| 2005 | 13,369,252 | 157,833 | 302,424 | 5.10 | 1,364.58 | 1.01 | 1,296.35 | 19.67 | 5.32 | 2.09 |
| 2006 | 13,526,464 | 157,212 | 158,106 | 4.70 | 1,412.52 | 1.03 | 1,339.21 | 13.90 | 5.13 | 1.10 |
| 2007 | 13,694,167 | 167,703 | 151,921 | 5.20 | 1,460.97 | 1.08 | 1,383.83 | 10.91 | 4.57 | 1.52 |
| 2008 | 13,882,566 | 188,399 | -117,310 | 6.30 | 1,449.29 | 1.09 | 1,349.72 | -7.19 | 4.55 | 3.31 |
| 2009 | 14,072,320 | 189,754 | 108,247 | 7.40 | 1,358.63 | 1.04 | 1,256.73 | -18.65 | 5.60 | 9.04 |
| 2010 | 14,232,744 | 56,142 | 224,188 | 6.30 | 1,350.10 | 1.05 | 1,264.77 | 4.44 | 5.82 | 13.46 |

Source: CBRE Econometric Advisors *As of 2Q10

Industrial Property Market Statistics

| National Industrial Market Fundamentals |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | $\begin{gathered} \text { Stock } \\ \text { (SFx 1000) } \end{gathered}$ | Completions (SFx 1000) | Avail. <br> Rate <br> (\%) | Net <br> Absorption (SFx 1000) | Gross <br> Asking Rent (\$/SF) | Net <br> Asking Rent (\$/SF) | NCREF <br> TRR <br> (\%) | Cap. <br> Rate <br> (\%) | CMBS <br> Del. <br> (\%) |
| 2000 | 11,616,090 | 254,549 | 6.70 | 310,670 | 5.65 | 6.03 | 13.35 | 8.82 | 0.53 |
| 2001 | 11,872,867 | 256,777 | 10.00 | -141,131 | 5.75 | 6.25 | 9.00 | 8.77 | 1.28 |
| 2002 | 12,030,986 | 158,119 | 11.20 | -11,556 | 5.67 | 6.00 | 6.54 | 8.59 | 1.97 |
| 2003 | 12,140,084 | 109,098 | 11.70 | 39,312 | 5.76 | 5.76 | 7.99 | 8.21 | 2.48 |
| 2004 | 12,286,778 | 146,694 | 11.10 | 205,240 | 5.67 | 5.70 | 11.56 | 7.62 | 2.23 |
| 2005 | 12,448,291 | 161,513 | 9.80 | 304,171 | 6.47 | 6.12 | 18.97 | 6.92 | 1.81 |
| 2006 | 12,642,861 | 194,570 | 9.50 | 210,769 | 6.24 | 6.21 | 15.99 | 6.34 | 1.02 |
| 2007 | 12,820,864 | 178,003 | 9.50 | 165,878 | 6.98 | 6.49 | 14.19 | 5.99 | 0.44 |
| 2008 | 13,008,283 | 187,419 | 11.40 | -78,657 | 7.10 | 6.25 | -5.59 | 5.97 | 1.10 |
| 2009 | 13,084,689 | 76,406 | 13.90 | -258,994 | 6.52 | 5.68 | -19.12 | 7.25 | 4.50 |
| 2010* | 13,218,732 | 10,116 | 14.10 | -24,427 | 6.16 | 5.49 | 2.22 | 7.15 | 6.06 |

Source: CBRE Econometric Advisors *As of 2Q10

| National Hotel Market Fundamentals |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Supply <br> (Rooms) | Demand <br> (Rooms) | Occ. <br> Rate <br> $(\%)$ | ADR <br> $(\$ / R m)$ | RevPAR <br> $(\$ / R m)$ | NCR日F <br> TRR (\%) | Cap. <br> Rate <br> $(\%)$ | CMBS <br> Del. <br> $(\%)$ |
|  |  |  |  |  |  | 10.39 | 10.75 | 1.73 |
| 2000 | $1,842,251$ | $1,264,591$ | 68.64 | 100.40 | 68.92 | 10.3 |  |  |
| 2001 | $1,898,561$ | $1,197,499$ | 63.07 | 98.06 | 61.85 | 8.66 | 7.06 | 6.59 |
| 2002 | $1,938,501$ | $1,192,665$ | 61.53 | 95.08 | 58.50 | 7.70 | 7.23 | 8.10 |
| 2003 | $1,962,555$ | $1,210,573$ | 61.68 | 94.12 | 58.05 | 7.63 | 9.15 | 6.97 |
| 2004 | $1,973,145$ | $1,281,841$ | 64.96 | 98.19 | 63.79 | 7.82 | 7.30 | 4.23 |
| 2005 | $1,960,387$ | $1,324,338$ | 67.55 | 105.86 | 71.52 | 8.61 | 6.97 | 2.53 |
| 2006 | $1,956,862$ | $1,324,653$ | 67.69 | 115.57 | 78.23 | 8.38 | 7.56 | 0.87 |
| 2007 | $1,977,974$ | $1,330,826$ | 67.28 | 123.87 | 83.34 | 16.99 | 7.67 | 0.31 |
| 2008 | $2,023,873$ | $1,306,792$ | 64.57 | 127.12 | 82.08 | -9.16 | 6.02 | 0.88 |
| 2009 | $2,089,017$ | $1,228,970$ | 58.83 | 113.32 | 66.67 | -22.11 | 4.82 | 10.96 |
| 2010 | $2,112,097$ | $1,283,770$ | 60.80 | 111.93 | 68.03 | 2.70 | 7.90 | 14.84 |

Source: CBRE Econometric Advisors *As of 2Q10

# Relative Value in Cash and Synthetic CMBS 

## Current CMBS Snapshot

## Commercial / Multifamily Real Estate Related Spreads

|  | Price / Spreads to Swaps/LIBOR (BPs) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 9/24/10 | YE09 | 9/30/09 | 6/30/09 | 3/31/09 | YE08 | $\begin{gathered} \text { '09 } \\ \text { Tights } \end{gathered}$ | '09 Wides | '09 Avg. Sprd. | '08 Avg Sprd |
| Fixed-Rate CMBS |  |  |  |  |  |  |  |  |  |  |
| AAA 3 YSS | 180 | 275 | 230 | 285 | 475 | 800 | 175 | 775 | 347 | 331 |
| AAA $5 Y$ SS | 245 | 330 | 400 | 600 | 1,050 | 1,250 | 330 | 1,350 | 683 | 427 |
| AAA 7 YSS | 265 | 400 | 460 | 700 | 1,100 | 1,350 | 400 | 1,400 | 752 | 448 |
| AAA AAB | 210 | 370 | 380 | 475 | 825 | 1,025 | 310 | 1,200 | 593 | 376 |
| AAA 10Y SS | 290 | 425 | 440 | 575 | 875 | 885 | 360 | 1,125 | 628 | 353 |
| AAA10Y Mezz | 600 | 1,050 | 1,050 | 1,300 | 2,200 | 1,700 | 950 | 2,300 | 1,410 | 567 |
| AAA 10 Y Jr . | 1,050 | 1,350 | 1,600 | 1,900 | 3,500 | 2,700 | 1,300 | 3,600 | 2,142 | 848 |
| AA | 2,900 | 2,750 | 2,700 | 3,400 | 4,550 | 4,200 | 2,450 | 4,800 | 3,460 | 1,195 |
| A | 4,000 | 4,050 | 4,200 | 4,600 | 5,800 | 4,400 | 3,700 | 6,000 | 4,628 | 1,412 |
| BBB | 6,500 | 6,450 | 5,900 | 6,200 | 11,000 | 6,500 | 5,250 | 11,000 | 7,239 | 2,130 |
| BBB- | 10,200 | 7,000 | 7,600 | 8,500 | 11,000 | 8,500 | 6,350 | 12,000 | 8,706 | 2,505 |
| Fixed-Rate AAA CMBS Relationships |  |  |  |  |  |  |  |  |  |  |
| SS Vs. Mez. | 310 | 1,050 | 1,600 | 725 | 1,300 | 1,815 | - |  | - | 213 |
| Mezz. Vs. Junior | 450 | 1,350 | 610 | 600 | 2,625 | 815 | - |  | - | 282 |
| SS Vs. Junior | 760 | 625 | 550 | 1,325 | 1,325 | 1,000 | - | - | - | 495 |
| Agency-Related Commercial/Multifamily Securities |  |  |  |  |  |  |  |  |  |  |
| FNMADUS $10 / 9.5$ | 73 | 68 | 75 | 90 | 165 | 280 | 50 | 280 | 97 | 138 |
| FNMADUS $7 / 6.5$ | 62 | 55 | 60 | 78 | 155 | 270 | 40 | 270 | 86 | 125 |
| GNMAProj. 3.5 | 65 | 75 | 82 | 100 | 140 | 190 | 65 | 225 | 92 | 114 |
| GNMAProj. 7.5 | 80 | 80 | 93 | 125 | 165 | 195 | 80 | 250 | 111 | 122 |
| GNMAProj. 10.5 | 95 | 90 | 108 | 135 | 175 | 200 | 90 | 275 | 123 | 130 |

[^2]CMBS Relative Value Analysis


Source: Jefferies. (as of 09/24/10)

CMBS Relative Value Analysis

| CMBS One-Year Historical Relative-Value Analysis: Ten-Y ear Heat Map |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Spread Fick-up/Give-up (BPs) |  |  |  | Z-score | Rich | - |  |  |  |  |  | Neutral |  | - |  | - | $\longrightarrow$ | Cheap |
| CMBS SS AAA 10Y Avg. Life vs: | Current | Min. | Max. | Avg. |  |  |  | -2.0 |  |  | -1.0 |  | 0 |  | 1.0 |  |  | 2.0 |  |
| CMBS AM | (310) | (650) | (215) | (443) | 1.22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CMBS AJ | (760) | $(1,240)$ | (675) | (912) | 1.22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CMBS AA | (2,610) | (2,890) | $(2,025)$ | $(2,595)$ | -0.07 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CMBS A | $(3,710)$ | $(4,310)$ | $(3,275)$ | $(3,777)$ | 0.27 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CMBS BBB | $(6,210)$ | $(8,380)$ | $(4,825)$ | $(6,854)$ | 0.94 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CMBS BBB- | $(9,910)$ | $(11,605)$ | $(5,975)$ | $(10,335)$ | 0.23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FNMA DUS 10/9.5 | 217 | 215 | 405 | 269 | -1.08 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GNMA Project Loan 7.5 Y | 210 | 195 | 385 | 256 | -1.03 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GNMA Project Loan 10.5Y | 195 | 185 | 380 | 246 | -1.08 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FNMA 30Y CC PT | 210 | 202 | 412 | 272 | -1.22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Swap 10 Y | 287 | 275 | 461 | 334 | -1.12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Credit Cards $10 Y$ | 240 | 225 | 385 | 280 | -1.05 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Industrial A 10Y | 185 | 185 | 360 | 234 | -1.12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Financial A 10Y | 47 | 41 | 234 | 100 | -0.97 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Source: Jefferies. (as of 09/24/10)


Sources. Bloomberg, Markit Inc., Jefferies \& Co.

CMBS Cash versus Equity Index \& Equity Volatility Index


Jefferies ${ }^{\text {K }}$

## Handicapping the CMBX Indices

- Credit Quality/Credit Enhancement Varies by Series
- CMBX.1: $2^{\text {nd }}$ Highest credit enhancement \& less aggressive underwriting
- CMBX. 2 and CMBX.3: Historically low credit enhancement and most aggressive underwriting
- CMBX.4: Improving credit enhancement, but aggressive underwriting
- CMBX.5: Rating Agencies 'Find Some' religion
- Highest CE
- More scrutiny on assets
- Still aggressive UW


## CMBX Summary Statistics by Series

|  | Avg. <br> Deal <br> Size | Total Series Size | \# of | Avg. <br> Loan <br> Size | Largest <br> Loan | $\begin{aligned} & \text { UW } \\ & \text { LTV } \end{aligned}$ | $\begin{gathered} \text { Stress } \\ \text { * LTV } \end{gathered}$ | UW | Stress* | $\begin{aligned} & \text { IG } \\ & \text { Loan } \end{aligned}$ | Prai- <br> Passu | B Note | Sub <br> Debt | $\begin{gathered} 10 \\ \text { Initial } \end{gathered}$ | $\begin{aligned} & \text { IO } \\ & \text { Term } \end{aligned}$ | Mdy's <br> Prop. | CE (\%) | CE (\%) | Delinq <br> Rate** | Watchlisted Loans |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Serie | (\$B) | (\$B) | Loan | (\$MM) | (\%) | (\%) | (\%) | DSCR | DSCR | (\%) | (\%) | \%) | (\%) | (\%) | (\%) | Score | AJ | BBB | (\%) | (\%) |
| CMBX. 5 | 2.09 | 52.27 | 3,542 | 15.2 | 11.1 | 67.6 | 109.0 | 1.36 | 1.24 | 5.6 | 15.5 | 8.6 | 52.4 | 41.3 | 41.7 | 1.8 | 12.70 | 3.68 | 1.56 | 14.88 |
| CMBX 4 | 3.34 | 83.6 | 5,240 | 17.4 | 10 | 70.1 | 114.9 | 1.37 | 1.28 | 4.8 | 13.5 | 9.5 | 55.7 | 30.8 | 56.0 | 1.6 | 12.32 | 3.36 | 3.13 | 13.28 |
| CMBX 3 | 3.4 | 85.03 | 5.293 | 16.2 | 8.9 | 68.3 | 104.3 | 1.45 | 1.4 | 11.0 | 8.9 | 5.2 | 45.4 | 31.2 | 50.3 | 1.7 | 11.42 | 2.77 | 3.00 | 22.03 |
| CMBX 2 | 2.47 | 61.82 | 4.513 | 14.6 | 9.7 | 68.6 | 101.2 | 1.43 | 1.33 | 9.4 | 7.2 | 0.0 | 43.1 | 49.9 | 24.1 | 1.8 | 12.22 | 3.16 | 3.15 | 22.26 |
| CMBX. 1 | 2.52 | 63.11 | 4.517 | 14.6 | 8.8 | 68.2 | 98.3 | 1.57 | 1.56 | 14.5 | 6.6 | 7.3 | 44.8 | 43.1 | 23.8 | 1.8 | 12.50 | 3.32 | 2.93 | 20.42 |

Source: Fitch, S\&P, Moody's, Commerciat Reat Estate Direct. ${ }^{*}$ Stressed Rating Agency LTV and DSCR.

CMBX Historical Pricing

| CMBX Price Level \& Statistics |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | Fixed Rate | $9 / 24 / 10$ | $9 / 17 / 10$ | $12131 / 09$ | $12 / 31 / 08$ |
| CMBX.NA.AAA.5 | 35 | 92.61 | 92.25 | 84.18 | 68.40 |
| CMBX.NA.AM.5 | 50 | 84.13 | 83.29 | - | - |
| CMBX.NA.AJ.5 | 98 | 65.05 | 63.32 | 56.23 | 37.15 |
| CMBX.NA.AA.5 | 175 | 42.25 | 40.64 | 34.04 | 30.43 |
| CMBX.NA.A.5 | 350 | 33.32 | 31.41 | 27.35 | 29.08 |
| CMBX.NA.BBB.5 | 500 | 19.18 | 18.96 | 18.10 | 22.89 |
| CMBX.NA.BBB-. 5 | 500 | 18.41 | 18.05 | 16.39 | 21.47 |
| CMBX.NA.BB.5 | 500 | 5.00 | 5.00 | 5.00 | 16.78 |
| CMBX.NA.AAA.4 | 35 | 92.34 | 91.88 | 82.96 | 69.92 |
| CMBX.NA.AM.4 | 50 | 82.59 | 81.61 | - | - |
| CMBX.NA.AJ.4 | 96 | 61.00 | 59.43 | 51.23 | 37.96 |
| CMBX.NA.AA.4 | 165 | 39.07 | 37.57 | 30.96 | 32.08 |
| CMBX.NA.A.4 | 348 | 32.79 | 30.95 | 23.66 | 31.68 |
| CMBX.NA.BBB.4 | 500 | 19.46 | 19.07 | 17.17 | 24.05 |
| CMBX.NA.BBB-.4 | 500 | 18.86 | 18.43 | 16.07 | 21.97 |
| CMBX.NA.BB.4 | 500 | 5.00 | 5.00 | 5.00 | 16.99 |
| CMBX.NA.AAA.3 | 8 | 93.14 | 92.95 | 84.54 | 70.19 |
| CMBX.NA.AM.3 | 50 | 85.36 | 84.82 | - | - |
| CMBX.NA.AJ.3 | 147 | 66.88 | 64.07 | 55.09 | 42.41 |
| CMBX.NA.AA.3 | 27 | 37.89 | 36.43 | 33.16 | 28.09 |
| CMBX.NA.A.3 | 62 | 29.27 | 26.75 | 24.75 | 25.79 |
| CMBX.NA.BBB.3 | 200 | 17.32 | 16.95 | 15.78 | 20.21 |
| CMBX.NA.BBB-.3 | 320 | 15.32 | 15.00 | 14.38 | 21.42 |
| CMBX.NA.BB.3 | 500 | 5.00 | 5.00 | 5.00 | 17.65 |

CMBX Price Level \& Statistics

|  | Fixed Rate | $9 / 24 / 10$ | $9 / 17 / 10$ | $12 / 31 / 09$ | $12 / 31 / 08$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| CMBX.NA.AAA.2 | 7 | 94.29 | 94.20 | 88.89 | 79.82 |
| CMBX.NA.AM.2 | 50 | 89.09 | 89.03 | - | - |
| CMBX.NA.AJ.2 | 109 | 81.32 | 79.05 | 64.11 | 56.98 |
| CMBX.NA.AA.2 | 15 | 59.25 | 58.00 | 41.12 | 43.77 |
| CMBX.NA.A.2 | 25 | 47.55 | 46.64 | 32.78 | 40.51 |
| CMBX.NA.BBB.2 | 60 | 23.04 | 21.64 | 19.82 | 31.32 |
| CMBX.NA.BBB-2 | 87 | 18.02 | 17.34 | 15.95 | 29.33 |
| CMBX.NA.BB.2 | 180 | 5.00 | 5.00 | 5.00 | 12.53 |
| CMBX.NA.AAA.1 | 10 | 96.24 | 96.11 | 92.50 | 85.92 |
| CMBX.NA.AM.1 | 50 | 93.01 | 92.94 | - | - |
| CMBX.NA.AJ.1 | 84 | 87.73 | 87.79 | 75.75 | 65.52 |
| CMBX.NA.AA.1 | 25 | 75.57 | 73.75 | 56.38 | 51.45 |
| CMBX.NA.A.1 | 35 | 59.73 | 57.57 | 46.19 | 45.66 |
| CMBX.NA.BBB.1 | 76 | 34.86 | 35.23 | 30.20 | 39.89 |
| CMBX.NA.BBB-1 | 134 | 24.86 | 23.84 | 25.18 | 35.56 |

Sources: Markit Inc.

## Markit TRX.NA Index

- Markit launched Commercial Mortgage Total Return Swap Index on Sep. 10, 2009
- Designed to provide investors an opportunity to gain exposure to CMBS through TRS contracts
- Investors can replicate short or long positions on cash bonds independent of credit \& prepayment risk
- Attractive for Asset Managers, Hedge Funds, Prop Trading, Research \& Strategy, Commercial Loan Originators, Correlation Trading Desks, Corporate Treasury Desks
- TRX.NA index series is based on a standardized basket of 118 CMBS reference obligations underlying the CMBX.NA.AAA index series.
- 12 contributors to the daily pricing process


## Important Disclosures

This material is provided for informational purposes only and is intended solely for your use. It may not be quoted, circulated or otherwise referred to without our express consent. This material is a product of Jefferies \& Company, Inc. ("Jefferies") trading and sales desk personnel. This material is not a research report and the commentary contained herein may contain views that differ from the Jefferies Fixed Income Research Department. Jefferies may have accumulated a long or short position in the subject security or securities or in related financial instruments on the basis of this analysis prior to its dissemination. All prices, yields, estimates and opinions expressed are indicative only and are subject to change without notice. This material is based on sources that we believe to be reliable, but we do not represent that it is accurate or complete. Additional and supporting information is available upon request. Certain transactions or securities mentioned herein, including those involving future, options, and other derivatives products give rise to substantial risk and are not suitable for all investors. Jefferies transacts business with counterparties on an arm's length basis and on the basis that each counterparty is sophisticated and capable of independently evaluating the merits and risks of each transaction and that each counterparty is making an independent decision regarding any transaction. This information is not to be considered an offer to sell or solicitation of an offer to buy the securities or other products discussed herein. Jefferies may have a long or short position in the securities or in related financial instruments or other products discussed herein, and may make purchases from and/or sales to customers on a principal basis or as agent for another person. Jefferies also may have acted as an underwriter of such securities or other products, and may currently be providing investment banking services to the issuers of such securities products. Pursuant to this relationship, Jefferies may have provided in the past, and may provide in the future, financing, advice, and securitization and underwriting services to these clients in connection with which it has received or will receive compensation.


[^0]:    Source: CREFC. Federal Reserve. Flow of Funds. Intex Solution, Inc. as of 09/10

[^1]:    Source: CBRE Econometric Advisors *As of 2010

[^2]:    Source: Jefferies \& Co. Note: YE09 figures are as of 12/24/09

