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- Current State of the CMBS Market
- Rating Agency Process
The CMBS Process
CMBS Principal Characteristics

- REMIC structure – “real estate mortgage investment conduit”
- Static pool – fully ramped at closing, no trading
- Master servicer and special servicer manage assets
- Collateral consists of loans secured by first-lien mortgages on commercial properties that have stabilized and regular cash flows
- Major property types: office, industrial, retail, multifamily, lodging
- Minor property types: mixed use, self-storage, healthcare
- Certificate structure: subordination of junior classes; IO strip for excess interest
The Participants in a Securitization

- Borrowers
- Mortgage Bankers
- Loan Originator/Loan Seller
- Depositor (SPE) Issuer/Investment Banker
- Investors
- Trustees/Fiscal Agent
- Financial Statements
- Appraisals
- Engineering Reports
- Environmental
- Rating Agencies
- Special Servicer
- Master Servicer
- Primary or Sub Servicer
- Securities

2 months (Loan Funding) + 2 months (Bond Issuance)
# The Participants in a Securitization

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Borrower:</strong> Owns the property, has repayment and performance obligations.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Mortgage Banker:</strong> Intermediary between borrower and loan originators/loan sellers.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Loan Originators/Loan Sellers:</strong> Lends money to the borrower, secured by a first priority lien, enters into a mortgage loan purchase agreement (“MLPA”) to sell the loan to the securitization depositor.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Depositor:</strong> An entity set up by the investment bank sponsoring the securitization purchases commercial mortgage loans and immediately sells loans to a trust.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Investment Banker:</strong> Overall responsibility for structuring the securitization, selling the bonds/certificates to investors, helps maintain a liquid secondary market for trading the bonds/certificates.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Issuer:</strong> The trust is the record owner of the commercial mortgage loans, formed by the depositor pursuant to a pooling and servicing agreement (“PSA”).</td>
</tr>
<tr>
<td>5</td>
<td><strong>Trustee:</strong> Responsible for administering the trust on behalf of and making payments to the investors.</td>
</tr>
</tbody>
</table>
## The Participants in a Securitization

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td><strong>Master Servicer:</strong> Responsible for servicing all mortgage loans owned by the trust.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Primary or Sub Servicer:</strong> May be the originating mortgage bankers, often the initial point of contact for the borrower.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Special Servicer:</strong> Named at the issuance of the CMBS to be responsible for servicing any mortgage loans that may default in the future.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Operating Advisor:</strong> Responsible for oversight/review of special servicer decisions; responsibility increases if losses increase in a given trust.</td>
</tr>
<tr>
<td>8</td>
<td><strong>Rating Agencies:</strong> Assigns risk of loss ratings on certain bonds/certificates issued for a securitization transaction, monitors performance after securitization funds.</td>
</tr>
<tr>
<td>9</td>
<td><strong>Investors:</strong> Different investors with varying risk appetites purchase certificates rated from AAA/Aaa to B/B and unrated certificates.</td>
</tr>
</tbody>
</table>
The Participants after the Securitization is Closed

- Investors
- Investors
- Trustee/Fiscal Agent
- Investment Bank/Secondary Traders
- Borrowers
- Master Servicer
- Primary or Sub Servicer/Mortgage Banker
- Special Servicer
- Operating Advisor
- Rating Agencies

Trust
Trustee Duties

- Appointed as trustee to hold trust fund consisting of pool of mortgage loans
- NY common law trust
- Trustee (or its custodian) takes physical possession of mortgage loan files
- Reviews mortgage loan files for completeness
- Responsible for making REMIC elections and filing REMIC tax returns
- The trustee must make any advances that the master servicer is required to make but fails to make
- Establishes and maintains various trust accounts
- Distributes trust account funds
- Performs certificate administration and prepares monthly investor reports
- Acts as backup servicer and makes backup principal and interest advances if the master servicer fails to do so
- Certificate registrar and paying agent
- Various other information and notification duties
Master Servicer

- Responsible for servicing and administration of all loans in the mortgage pool, except special servicing functions
- May engage primary or sub-servicers
- Must act in accordance with the “servicing standard”
- In accordance with applicable law, the terms of the PSA, the terms of the mortgage loans and...

  • With the same care, skill, prudence and diligence with which the master servicer services and administers similar mortgage loans for other third parties and for itself, whichever is higher.

  • With a view to the timely collection of all scheduled payments of principal and interest under the mortgage loans and the maximization of the recovery on the mortgage loans to the certificateholders (as a collective whole) on an NPV basis.
Master Servicer

- Collects monthly payments of principal and interest from borrowers
- Point of communication with the mortgage loan borrower and approves borrower requests for easements, alterations, demolitions, etc.
- Monitors borrower compliance with mortgage loan documents (affirmative and negative covenants, financial reporting, etc.)
- Conducts periodic inspections of mortgaged properties (other than specially serviced loans)
- The master servicer is obligated to make P&I advances and servicing advances
Master Servicer

- P&I advances:
  - The master servicer is generally required to make advances with respect to any delinquent scheduled monthly payments of principal and/or interest.
  - Balloon loans that default at maturity – the master servicer must advance on the same amortization schedule as if the maturity date had not occurred.
  - Neither the master servicer nor the trustee will be required to make any advance that it determines will not be ultimately recoverable from proceeds of the related underlying mortgage loan.

- Advances are reimbursed, first out of any collections on the related mortgage loan and second, if it is determined that an advance is not recoverable from expected collections on the related mortgage loan or REO property, out of general collections on all the entire mortgage pool.

- Advances accrue interest, typically at the prime rate.
Special Servicer

- Experienced commercial real estate workout specialists

- Responsible for servicing and administration of all loans transferred from master servicer to special servicing. May change from deal to deal but generally transfer on:

  - Payment default at maturity (subject to extension).
  - 60 day delinquency in monthly P&I.
  - Master servicer or special servicer reasonably determines that payment default or material non-monetary default has occurred or is imminent and is not likely to be cured by the related borrower within 60 days.
  - Borrower insolvency events.
  - Foreclosure or proposed foreclosure of other liens on the mortgaged property.
  - Any other default that, in the reasonable judgment of the master servicer or special servicer, has materially and adversely affected the value of the mortgage loan.
Special Servicer

– Evaluate whether the causes of the default can be corrected over a reasonable period without significant impairment of value to mortgaged property

– Order appraisals and provide for reduced amounts of servicing advances based on a decrease in appraised value

– Initiate corrective action in cooperation with the borrower if cure is likely

– Inspect the mortgaged property and take such other actions as it deems necessary and appropriate

  • Workout / Liquidation /or Real Estate Owned (REO)
Special Servicer

Workout: amend, modify or waive terms of the defaulted mortgage loan

- Forgive principal, accrued interest and/or yield maintenance.
- Reduce monthly P&I payments, including a reduction in the interest rate.
- Forbearance.
- Extend maturity date.
- Permit the release of substitution of collateral.
- Accept principal prepayment during any lockout period.
Special Servicer

Liquidation:

- Upon mortgage loan default, the special servicer may proceed with liquidation.
- Institute foreclosure proceedings, exercise any power of sale contained in the mortgage, obtain a deed in lieu of foreclosure or otherwise acquire title to the related mortgaged real property by operation of law.
- Environmental concerns – do not want the issuing trust becoming primarily liable as mortgagee-in-possession or owner/operator under environmental laws.
- REO properties – property where the trust has foreclosed on the mortgage and taken possession of the property.
- Under REMIC rules, must sell by the end of the third calendar year after the year the trust took possession, but this can be extended up to three more years by request to the IRS.
- Generally, accepts first bid at a fair price or otherwise as may maximize proceeds given obligation to dispose of property within REMIC time limits.
- Generally, appraisal conducted to confirm whether price is fair.
Special Servicer

Foreclose and become REO: Accounts maintained to pay the expenses of operation, management and disposition of REO property

- May contract with an independent operator for the property.
- May advance expenses with respect to REO property so long as those expenses are not determined to be nonrecoverable.
Controlling Class

– This is initially the “B-piece”

– The most subordinate class of REMIC certificates then outstanding and having a total principal balance of at least 25% of OPB

– The directing certificateholder is the holder of 50%+ of the controlling class

– The controlling class may remove the special servicer without cause

– Controlling class granted certain consent rights
  
  • Modification, waiver or amendment of a monetary term (other than default interest and/or late payment charges) or a material non-monetary term.
  
  • Foreclosure, sale or release of a mortgaged property.
  
  • Acceptance of a discounted payoff.
  
  • Any waiver of a “due on sale” or “due on encumbrance” clause.
  
  • Any release of a borrower from liability under a mortgage loan.
Operating Advisor

- Provides independent monitoring of special servicer actions relating to specially serviced loans
- Addresses concern that B piece holders may be exercising undue influence on the special servicer to maximize value for the B piece holder at the expense of the rest of the deal
- Must either be a special servicer which has not previously caused a downgrade in a deal by way of special servicer malfeasance only or be in the business of analyzing and advising clients in CMBS matters and have at least five years of experience in collateral analysis and loss projections and commercial real estate asset management and workouts
- Obligated to perform its duties on behalf of all of the certificate holders in a deal as a whole
- Cannot become a replacement special servicer in a deal without 100% certificate holder consent
- Monitors the special servicer while the B-piece buyer is the controlling class. As control transfers, the Operating Advisor’s powers expand as described in the chart below
Legal Documents
1. Borrower/Lender Loan Documents:
   - Promissory Note
   - Loan Agreement
   - Mortgage or Deed of Trust
   - Assignment of Leases and Rents
   - Guaranty/Indemnity Agreement
     - Environmental
     - Carve Outs
   - Title Insurance Policy
   - Ground Lease and Ground Lessor Estoppel
   - Reserve or Escrow Agreement
   - Lockbox and/or Cash Management Agreement
   - Franchise Agreements
   - Letters of Credit
Legal Documents

1. Borrower/Lender Loan Documents:
   - Intercreditor Agreements:
     - Mezzanine Intercreditor Agreement
       - Among the senior lender and mezzanine lender; includes express subordination, notice and cure rights, purchase option, and certain consent rights
     - Co-Lender Agreement
       - Sets forth the rights and obligations of the holders of the pari passu notes; designates servicer for loan
     - Junior Debt Subordination and Standstill Agreement
       - Between senior lender and junior lender; may include notice and cure rights; junior lender agrees not to pursue rights or remedies while senior loan is outstanding
Legal Documents

2. CMBS Securitization Documents:
   - **Mortgage Loan Purchase Agreement (MLPA):**
     - Originator sells commercial mortgage loans to the depositor for contribution to the CMBS Trust
     - Seller makes mortgage loan representations and warranties, which are assignable to CMBS Trust
     - Recourse for breach of reps and warranties set forth in MLPA
   - **Pooling and Servicing Agreement (PSA):**
     - Creation of CMBS Trust
     - Conveyance of loans from Depositor into Trust
     - Appointment of Trustee, Master Servicer, Special Servicer and Trust Advisor
     - **Governs administration and servicing of the mortgage loans:**
     - Sub-Servicing agreements between Master Servicer and Sub or Primary Servicers
     - Issuance of certificates
     - Waterfall distribution/payment of funds
     - Rights, obligations, duties of parties
     - Servicing requirements/Servicing Standard
     - Remic compliance
     - Reporting: SEC, CREFC IRP
Legal Documents
2. CMBS Securitization Documents:

- Disclosure/Securities Documents:
  - Issuers and underwriters/placement agents must utilize an appropriate disclosure document under state and federal securities laws
- Public Offerings:
  - Register the securities with the SEC
  - Registration statement with prospectus
- Non-Public or Private Transactions:
  - Private Placement Memorandum (Rule 144A)
Where the Money Goes

Loan Originator/
Loan Seller
(Lender)

Mortgage
Notes

Securities Sale
Proceeds at
Closing

Trustee-
Distribution
Account

Securities
Sale
Proceeds at
Closing

Monthly
Bond
Coupon &
Principal

Debt Service
Less
Servicer Fee
Plus Advances

Servicer-
Collection
Account

Debt Service &
Escrows

Borrowers

Loan Proceeds

Assignments of Rents & Leases

Securities

Investors
## Transaction Timetable

<table>
<thead>
<tr>
<th>Activity</th>
<th>Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial analysis</td>
<td>LO, IB</td>
</tr>
<tr>
<td>Due diligence for securitization</td>
<td>LO, IB, SC</td>
</tr>
<tr>
<td>Structuring process</td>
<td>LO, IB</td>
</tr>
<tr>
<td>B-buyer due diligence</td>
<td>LO, IB, BB</td>
</tr>
<tr>
<td>Rating agency review</td>
<td>LO, IB, RA</td>
</tr>
<tr>
<td>Selection of servicer &amp; trustee</td>
<td>LO, IB, SV</td>
</tr>
<tr>
<td>Legal documentation, both private &amp; public securities offerings</td>
<td>ALL</td>
</tr>
<tr>
<td>Pre-marketing of securities</td>
<td>IB, Inv, RA</td>
</tr>
<tr>
<td>Marketing / pricing</td>
<td>IB, Inv, BB, RA</td>
</tr>
<tr>
<td>Private offering:</td>
<td>IB, Inv, RA</td>
</tr>
<tr>
<td>Pricing of below-investment</td>
<td>IB, Inv, RA</td>
</tr>
<tr>
<td>Public offering:</td>
<td>IB, Inv, RA</td>
</tr>
<tr>
<td>Pricing of investment grade</td>
<td>IB, Inv, RA</td>
</tr>
<tr>
<td>Closing of securities</td>
<td>ALL</td>
</tr>
</tbody>
</table>

**Participants:**
- **LO**: Loan Originator
- **IB**: Investment Bank
- **SV**: Servicer
- **RA**: Rating Agency
- **UC**: Underwriter's Counsel
- **SC**: Seller's Counsel
- **Inv**: Investor
- **BB**: B-Piece Buyer
- **UC**: Underwriter's Counsel
- **SC**: Seller's Counsel
Build-A-Bond
Hypothetical Structure: Credit Tranching

$100MM Pool of Mortgages

$76.5MM Investment Grade CMBS: Aaa/AAA

$16.5MM Other Investment Grade CMBS: Aa2/AA, A2/A, Baa3/BBB-

$7MM Non-Investment Grade CMBS: NR/NR

Loss Position

Credit Risk

Last Loss
Low Risk

First
Higher Risk
CMBS Structure: Credit Tranching

Pool of Mortgages

<table>
<thead>
<tr>
<th>Security Type</th>
<th>Subordination %</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super Senior AAA</td>
<td>30.000%</td>
<td>2.67, 4.87, 6.83, 9.91</td>
</tr>
<tr>
<td>Junior AAA</td>
<td>23.500%</td>
<td>9.93</td>
</tr>
<tr>
<td>BBB-</td>
<td>7.000%</td>
<td>9.93</td>
</tr>
<tr>
<td>NR</td>
<td></td>
<td>10.00</td>
</tr>
<tr>
<td>AA-</td>
<td>16.625%</td>
<td>9.93</td>
</tr>
<tr>
<td>A-</td>
<td>12.875%</td>
<td>9.93</td>
</tr>
</tbody>
</table>

Avg. Life

- 2.67
- 4.87
- 6.83
- 9.91
- 9.93

Spread

- 46
- 65
- 85
- 88
- 114
- 152
- 202
- 356

Principal Paydown

Allocation of Losses

* Priced off comparable tenor swaps. Swap rate is typically higher than related U.S. Treasury to allow for anticipated variance in LIBOR; thus accounts for choice between fixed and floating rate loans. Mortgages are therefore also priced off swaps.
CMBS Structural Evolution

2004

AAA
AA
A
BBB
NR

2007

AAA
AM
AJ
AA+
AA
AA-
A+
A-
BBB+
BBB
BBB-
BB+
BB
BB-
B+
B
B-
NR

2014

AAA
AS
AA-
A-
BBB-
BB
BB
B
B
NR
• Mortgage Pool WAC = 4.50%
• Cannot issue certificates at a rate higher than Mortgage Pool WAC; Certificate Rate may be subject to WAC Cap
• Below Investment Grade (BIG) Certificates are sold at a discount to achieve required yield
• Excess Interest available for payment on Interest Only (IO) Certificates; proceeds from sale of IO Certificates make up for discount on sale of BIG Certificates plus represent profit, typically 1 to 2 points
Investors of CMBS
Who Buys CMBS?

- Institutional fixed income securities investors buy investment grade bonds

- Real estate high yield investors buy below investment grade bonds

- Varies by class, rating, structure and underlying collateral
Current CMBS Investor Base

- The new issue CMBS market has experienced more investors participating as demand has returned to the market
- New issue investment grade buyers tend to be mostly money managers, but insurance companies and pension funds have increased their participation since 2011
  - The CMBS 2.0/3.0 market has seen a much larger share of ‘buy-and-hold’ investors relative to CMBS 1.0
- Insurance companies and money managers have also begun to buy lower-rated bonds as they search for yield in the current low interest rate and tight spread environment
- The share of CMBS bonds purchased by money managers has fallen by 50% over the past year as retail investors have begun to move away from CMBS in the rising interest rate market\(^{(1)}\)

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### U.S. Non-Agency CMBS Investor Universe \(^{(1)}\)

<table>
<thead>
<tr>
<th></th>
<th>2004-2007</th>
<th>2013 to 2014 YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money Managers</td>
<td>26.0%</td>
<td>47.1%</td>
</tr>
<tr>
<td>Insurance Companies</td>
<td>29.0%</td>
<td>26.0%</td>
</tr>
<tr>
<td>Banks</td>
<td>25.0%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Opp. Funds</td>
<td>9.0%</td>
<td>13.7%</td>
</tr>
<tr>
<td>GSEs</td>
<td>9.0%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Pension Funds</td>
<td>2.0%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

---

\(^{(1)}\) Source: Wells Fargo Securities, LLC. Wells Fargo conduit and fixed-rate single borrower transactions only, as of September 15, 2014. Does not include B-piece portion of the transactions.
Why?

- Yield differential (relative value investing)
- Credit performance
- Asset allocation (satisfy allocation to real estate debt)
- Non-correlated risks (compared to MBS and corporates)
- Comparative credit risk

Remember

- Credit risk ≠ Yield
Yield Differential (10-Year Sector; Yield over Treasury)

Source: Wells Fargo, Spread Market Overview (7/25/2014)
Satisfying Asset Allocation to Real Estate Debt

- Risk based capital treatment for insurance companies gives advantage to CMBS
  - Mortgages = 0.9% to 1.75% risk based capital (depending on LTV/DSCR risk cohort) \(^{(1)}\)
  - Investment Grade CMBS = 0.4% risk based capital for all current 3.0 securities \(^{(1)}\)
- Cost of management (direct loan vs. securities investment)
- Liquidity (ease of trading in and out of the portfolio)
- Creates diversified investment portfolio

\(^{1}\) Source: NAIC
Holders of Commercial & Multifamily Mortgage Loans

- $3.2 trillion of the $13.3 trillion outstanding U.S. mortgages are commercial or multifamily loans.

Market Size Comparison (as of Q1 2014)

Market Size Comparison (as of Q1 2014)

Source: (1) NAREIT; (2) Bloomberg; (3) World Bank; (4) Federal Reserve Flow of Funds
Current State of the CMBS Market
Since the peak in 2007, issuance has slowly been building back toward pre-crisis levels.

The first multi-borrower “conduit” transaction to come to market since 2008 priced in April 2010, which kick-started the CMBS 2.0/3.0 market.

The market has steadily expanded, with 2011 and 2012 issuance totaling $32.7 billion and $48.4 billion, respectively.

Issuance in 2014 is projected to be approximately $90.0 billion, in line with the $86.1 billion issued in 2013.

1 Source: Commercial Mortgage Alert, as of October 3, 2014.
2 Source: Commercial Mortgage Alert, as of December 31, 2013. Includes non-agency CMBS deals and the non-guaranteed, private placement portion of agency CMBS deals.
CMBS Leverage

- CMBS 2.0/3.0 transactions have exhibited lower leverage and more conservative underwriting standards than the peak transactions of CMBS 1.0
  - Stressed rating agency LTVs are comparable to those of the 2006 vintage
- As the market recovers and loan origination competition increases, underwriting has become more aggressive since 2011, but still remains more conservative than the underwriting standards before the financial crisis
- Conduit transactions have higher subordination levels throughout the capital structure. Subordination for the most junior AAA classes in 2014 YTD has averaged approximately 23.8% vs. 12.1% in 2007
  - Rating agencies have also required substantially higher subordination at all rating levels vs. CMBS 1.0
- CMBS 3.0 deals have reverted back to a super senior structure similar to CMBS 1.0 in order to provide investors at the top of the capital stack with maximum credit protection and bond liquidity

Stressed LTV in CMBS 2.0 / 3.0 vs. 1.0

1 Source: Wells Fargo Securities, LLC as of September 5, 2014. Represents Moody’s-rated transactions only and includes investment grade loans.
CMBS Conduit Spreads (1/1/2014 – 10/9/2014)

- Somewhat lower-than-expected new issue conduit supply
- Ukraine/Middle East geopolitical unrest and CMBS supply concerns
- Competition among lenders leads to increasing CMBS LTVs
- All-time post-crisis tight AAA print
- Global growth concerns

Legend:
- BBB-
- 10yr AAA
# CMBS Market Evolution

CMBS transactions have evolved enormously in various capacities from **CMBS 1.0 (pre-credit crisis)** to **CMBS 2.0/3.0 (post-credit crisis)**.

## Loan Structure

<table>
<thead>
<tr>
<th><strong>CMBS 1.0</strong></th>
<th><strong>CMBS 2.0/3.0</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amortization</td>
<td>&gt;80% Interest Only</td>
</tr>
<tr>
<td>Reserves (Taxes/Insurance/TILC/Capex)</td>
<td>Minimal/Borrower Guarantees</td>
</tr>
<tr>
<td>Non-recourse Carve-out Guarantor</td>
<td>Generally the borrowing entity, no other assets other than the property</td>
</tr>
</tbody>
</table>

## Collateral Underwriting

<table>
<thead>
<tr>
<th><strong>CMBS 1.0</strong></th>
<th><strong>CMBS 2.0/3.0</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Types</td>
<td>Same as CMBS 2.0/3.0 plus land, construction, transitional, casino/gaming, senior living, sub debt</td>
</tr>
<tr>
<td>Vacancy Assumptions</td>
<td>Grossed up to market, projections</td>
</tr>
<tr>
<td>Rent Assumptions</td>
<td>Pro-forma</td>
</tr>
</tbody>
</table>

## Credit Metrics

<table>
<thead>
<tr>
<th><strong>CMBS 1.0</strong></th>
<th><strong>CMBS 2.0/3.0</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Max LTV</td>
<td>80% - 85%</td>
</tr>
<tr>
<td>Average/Min DSCR</td>
<td>1.30x / 1.10x</td>
</tr>
<tr>
<td>Average Debt Yield</td>
<td>~8%</td>
</tr>
</tbody>
</table>

## Rating Agencies

<table>
<thead>
<tr>
<th><strong>CMBS 1.0</strong></th>
<th><strong>CMBS 2.0/3.0</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Due Diligence Process</td>
<td>Open discussion</td>
</tr>
<tr>
<td>HERF Score</td>
<td>&gt;40</td>
</tr>
<tr>
<td>Stressed LTV</td>
<td>~110% - 120%</td>
</tr>
</tbody>
</table>

## Subordination Levels

<table>
<thead>
<tr>
<th><strong>CMBS 1.0</strong></th>
<th><strong>CMBS 2.0/3.0</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>12-14% with a 30% super-senior class</td>
</tr>
<tr>
<td>AA</td>
<td>10%</td>
</tr>
<tr>
<td>A</td>
<td>8%</td>
</tr>
<tr>
<td>BBB+</td>
<td>6%</td>
</tr>
<tr>
<td>BBB</td>
<td>5%</td>
</tr>
</tbody>
</table>
CMBS Market Evolution (continued)

CMBS transactions have evolved enormously in various capacities from CMBS 1.0 (pre-credit crisis) to CMBS 2.0/3.0 (post-credit crisis)

<table>
<thead>
<tr>
<th>Offering Type</th>
<th>CMBS 1.0</th>
<th>CMBS 2.0</th>
<th>CMBS 3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offering Type</td>
<td>Public</td>
<td>Private</td>
<td>Public / Private</td>
</tr>
<tr>
<td>Super Senior AAA C/E</td>
<td>30%</td>
<td>NAP</td>
<td>30%</td>
</tr>
<tr>
<td>Hyper-tranched classes</td>
<td>Yes – 20 - 25 classes</td>
<td>No – 12 - 15 thicker tranches</td>
<td>No – 12 - 15 thicker classes</td>
</tr>
<tr>
<td>B-piece yield</td>
<td>12% - 14%</td>
<td>15% - 18%</td>
<td>15% - 17%</td>
</tr>
<tr>
<td>B-piece size</td>
<td>3% of total pool; NR only</td>
<td>5% - 7% of total pool; Non-IG</td>
<td>5% - 7% of total pool, Non-IG</td>
</tr>
<tr>
<td>B-Piece change of control</td>
<td>Realized losses</td>
<td>Inclusive of appraisal reduction</td>
<td>Inclusive of appraisal reduction</td>
</tr>
<tr>
<td>Operating advisor</td>
<td>NAP</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Special servicer</td>
<td>Generally same as B-piece buyer</td>
<td>Generally independent</td>
<td>Generally independent</td>
</tr>
<tr>
<td>Limits on special servicer comp.</td>
<td>NAP</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Reporting / Disclosure</td>
<td>Limited</td>
<td>Ongoing, website to help facilitate</td>
<td>Ongoing, website to help facilitate</td>
</tr>
<tr>
<td>Pari Passu Notes</td>
<td>Frequent</td>
<td>Rare, only controlling</td>
<td>Common, both controlling and non-controlling</td>
</tr>
</tbody>
</table>
Non-Agency CMBS New Issue Market

Conduit Transactions

- Conduit transactions are backed by a pool of multiple loans originated to multiple borrowers.
- In 2013, 46 non-agency conduit CMBS transactions totaling $53.5 billion were offered.\(^1\) Issuance is projected to reach approximately $85.0 billion in 2014.\(^2\)
- Recently issued conduit transactions have been well subscribed, with demand for credit bonds rising as absolute yields continue to remain low.
- In the context of the broader market, Q2 2014 has seen stability following Q1 2014’s volatility, as the market continues a slow, albeit steady recovery and the Fed has maintained a consistent and transparent monetary policy.
- AAA LCF 10-year bonds from newly issued CMBS conduit deals have been issued in a tight range of S+71 to S+95 in 2014, while BBB- spreads have tightened from S+360 in January 2014 to S+310\(^3\).

Single Borrower and Large Loan Transactions

- Single borrower transactions are typically backed by one loan, generally greater than $200.0 million, collateralized by large assets owned by institutional sponsors.
- In 2013, 30 large loan, fixed-rate transactions were offered, totaling $18.6 billion. In addition, 14 large loan, floating-rate transactions totaling $7.1 billion were executed in 2013.\(^1\) Total single borrower, fixed-rate issuance is projected to reach approximately $10.0 billion in 2014, while total floating-rate issuance is expected to be approximately $10.0 billion\(^3\).
- Recent large loan, fixed-rate transactions have been primarily collateralized by a single asset as opposed to large, cross-collateralized portfolios.
- Of the transactions issued in 2014, 8.7\% by count (5.1\% by balance) were secured by retail properties, 34.8\% (37.9\% by balance) by office properties, and 43.5\% by count (38.9\% by balance) were secured by hotel properties.
- Over the past 12 months, fixed rate AAA spreads have ranged between S+88 and S+115, while BBB- spreads have ranged from S+150 and S+330. Similarly, floating rate AAA spreads have ranged between L+80 and L+150, while BBB- spreads have ranged from L+175 and L+504.

1. Source: Commercial Mortgage Alert, December 31, 2013
How The Rating Agency Process Converts Pool Evaluation to Bond Levels
What is a Rating?

- The assessment of the likelihood that the cash flows and recoveries from the collateral will be sufficient to pay the requirement of the security as defined.

- Rate only credit risk – default and loss on the investor’s principal investment.

- No assessment as to prepayment risk, liquidity, or promised yield.

- Rate its timely payment of interest and ultimate repayment of principal.
Rating Process

- A rating should indicate its ability to withstand a particular stress during an economic downturn

- For example, a AAA bond should be able to withstand a significant macroeconomic stress
Frequency & Severity

▪ What is the frequency or probability that a loan will default and, if it defaults, what is the severity of loss that might be expected?

▪ How does the severity of loss vary by property type?

▪ How do you size a loss event which is appropriate at each rating category?

▪ Frequency x Severity = Expected Loss (which drives subordination levels)
Sampling
Representative Sample Based on:

- Seller/originator
- Loan balance
- Geographic location
- Property type

Site Inspections/
Cash Flow Analysis/
Asset Summary Review

40% - 75% by
Dollar Balance
Cash Flow Analysis

*Determine Normalized Cash Flow*

- **Income**
  - Based on historical financial information
  - Consideration of leases in place

- **Makes adjustments to:**
  - above-market rents
  - vacancy
  - management fees
  - operating expenses
  - replacement reserves
  - leasing costs & tenant improvements

- **Result is Property Net Cash Flow**

- **Extrapolate average haircut to rest of loans**
Multi-borrower Pool Model

Default Probability \times \text{Loss Severity} = \text{Expected Loss}

\text{Expected Loss} + \text{Pool Composition Factors} = \text{Final Subordination}

- Default probability and loss severity are based primarily on DSCR & LTV
- Default probability and loss severity are adjusted by collateral and loan features
- Base subordination levels are adjusted by pool concentrations and characteristics
- Defaults and losses based on a stress environment, shown in results from historic commercial performance data
Base Default Probability

Base Default Probability is determined by the DSCR or both DSCR and LTV

- DSCR has a Term-Risk Component and a Balloon-Risk Component

  - The Term-Risk Component uses the actual interest rate and amortization schedule for calculating DSCR (i.e. the “Term DSCR”)

  - The Balloon-Risk Component uses a hypothetical refinance interest rate and amortization schedule to calculate DSCR (i.e. the “Constant DSCR”)
Loan Level Adjustments

Default Probability is further adjusted by:

- Geographic Location
- Loan Structure/Reserves
- Property Type
- Economic Factors
- Asset Volatility Assessment
- Natural Disaster Risk
  - Earthquake
  - Windstorm
Base Loss Severity

\[
\text{Normalized / Sustainable Value} = \frac{\text{LTV}}{\text{Capitalization Rate}} = \frac{\text{Securitization Loan Balance}}{\text{Normalized / Sustainable Value}}
\]

Loss Severity is based on the LTV, which uses a stressed / sustainable capitalization rate.
Loan Level Adjustments

*Base Loss Severity is further adjusted by other factors including:*

- Property Quality
- Geographic Location
- Property Type
- Amortization
- Additional Leverage
- Sponsor Concerns
- Cross Collateralization
- Lockbox / Cash Control
Pool Level Adjustments

- Once Loan-Level expected loss is determined, Pool-Level subordination is adjusted after considering:
  - Loan Size Diversity (i.e. Herf)
  - Geographic Diversity
  - Property Type Diversity
  - Sponsor/Operator Diversity
  - Origination Quality
Thank You

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