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Criteria | Structured Finance | Request for Comment: **U.S. CMBS Rating Methodology And Assumptions For Conduit/Fusion Pools**

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Criteria | Structured Finance | Request for Comment:

U.S. CMBS Rating Methodology And Assumptions For Conduit/Fusion Pools

Standard & Poor's Ratings Services is requesting comments on its proposed changes to its methodology and assumptions for rating U.S. commercial mortgage-backed securities (CMBS). This request for comment discusses the "credit quality of the securitized assets" principle described in "Principles-Based Rating Methodology For Global Structured Finance Securities," published May 29, 2007, on RatingsDirect at www.ratingsdirect.com and Standard & Poor's Web site at www.standardandpoors.com.

This request for comment is part of a broad series of measures that we announced early last year intended to enhance our governance, analytics, dissemination of information, and investor education. Those measures are aimed at augmenting our independence, strengthening the rating process and increasing transparency.

Scope Of The RFC

This RFC is intended only for transactions that are commonly referred to as "conduit," or "conduit/fusion," which, as of the end of April 2009, accounted for about 85% of the outstanding CMBS market. That is, the scope of the following proposed criteria refers to deals that include a geographically diversified pool of at least 20 loans, which may or may not contain several relatively larger-sized loans. Additionally, we assume that on average, the underlying loans will represent roughly the same quality on a stand-alone basis as they have historically. In other words, we would not use this criteria to rate a deal pool entirely composed of 'BBB' or 'A' quality loans. Nor is the following RFC intended for "single-borrower" or "large-loan" floating-rate deals, whose credit risk profile and characteristics may vary widely from what we are attempting to capture here, even though both technically fall under the same umbrella of "CMBS."

Proposal Summary

Although we are leaving our property evaluation criteria unchanged, Standard & Poor's is proposing a significant update to its methodologies and assumptions whereby we would migrate from property evaluation and begin determining credit enhancement levels and ratings for CMBS conduit/fusion pools. At the core of the approach is the establishment of an 'AAA' credit enhancement level that is sufficient to enable tranches rated at that level to withstand market conditions commensurate with an extreme economic downturn without defaulting. As a result of this update, we expect that 'AAA' credit enhancement levels will rise significantly from current levels. While the mechanics of the proposed methodology are new, they reflect concepts from our past views on commercial mortgage loan credit risk. The key aspects of the proposal on which we are requesting market feedback are:

- Establishing 'AAA' credit enhancement levels that we expect will be sufficient to withstand a pre-set level of commercial property income declines. By extension, the 'AAA' credit enhancement levels will also be sufficient to withstand severe declines in property values.
- Refining our capitalization rates to provide greater specificity and consistency from one pool to another.
- Introducing a standardized method to assess geographic concentration.

- Using a forward-looking commercial real estate forecast for the term of the transaction to determine our expected loss of each transaction we rate.
- Revising our surveillance methodology for projecting losses.

The goal of the proposed framework is to provide the market with a more transparent and straightforward approach to assessing the creditworthiness of CMBS securities. Defining our average stress for 'AAA', 'BBB', and 'B' credit enhancement would provide the market with clearer benchmarks against which all pools are measured, both in terms of credit support provided and the particular risk characteristics of each transaction. We also propose to make the criteria more responsive to changing conditions by placing greater emphasis on how macroeconomic factors affect property-level credit risk factors (such as income and valuation), our outlook on the commercial real estate sector, and the state of the economy.

How We Will Assign Ratings

We propose to employ a three-step process. First, we will determine raw credit enhancement amounts for each loan for the 'AAA', 'BBB', and 'B' rating categories. Second, we will sum the raw credit enhancement amounts for all the loans to determine our raw credit enhancement amounts for the entire pool. Third, based on the pool's degree of geographic and loan size concentration, we will apply an adjustment factor to produce our final credit enhancement amounts for the pool.

We propose to determine the 'BBB' credit enhancement associated with a given loan as the greatest of four potential measures: (1) S&P stabilized net cash flow ("S&P NCF") and S&P adjusted value ("S&P Value"), which we would determine in accordance with current criteria (see "Structured Finance CMBS Property Evaluation Criteria," p. 12 [January 2004]); (2) a new commercial property model; (3) a floor amount determined by reference to the loan's 'AAA' credit enhancement amount; and (4) possible qualitative determination of an amount greater than the other three.

We propose to determine the 'AAA' credit enhancement associated with a given loan by applying greater stress as part of our analysis in the form of a further decline in rents and net cash flow. We propose to determine the 'B' credit enhancement amount by determining an expected loss based on a forward-looking rental forecast. Once we determine our credit enhancement levels for the 'AAA', 'BBB' and 'B' ratings for a CMBS transaction, we will determine our credit enhancement levels for the 'AA', 'A', and 'BB' rating categories through interpolation. All of the methods and estimates used, as well as the reasoning behind them, are discussed in greater detail below.

Response Deadline

We encourage all market participants to submit comments on the proposed criteria by June 2, 2009. Please send your written comments to CriteriaComments@Standardandpoors.com.

Once the comment period is over, we will review the comments and finalize the criteria, which will consist of elements adopted based on this RFC and from current criteria. We will then publish the updated criteria.

Specific Questions For Which We Are Seeking a Response

- 'AAA' credit enhancement levels are likely to increase significantly as a result of this proposal. Our prototypical conduit/fusion pool (which is defined below) is being anchored to a credit enhancement level of 20%. We are also considering establishing a minimum credit enhancement for new issue pools of exceptional quality and diversification equal to the greater of 10% or the combined balance of the two largest loans currently in the pool based on the cutoff principal balances of those loans. What do you think is an ideal 'AAA' credit enhancement for our prototype pool? Is the "floor" appropriate?
- Do you agree with our approach for setting 'BBB' credit enhancement levels? Do you think a floor is appropriate at 'BBB'?
- Do you agree with our proposed approach of using forecasts to factor changing market conditions into our analysis?
- Do you have any comments on our general approach to the surveillance of existing ratings and the proposed enhancements to our analysis?
- Do you have any other comments or concerns regarding this proposal?

Applicability Of The New Criteria

When adopted, we will apply the updated criteria to newly rated and existing U.S. CMBS. In the interim, we will continue to apply our current criteria to U.S. CMBS.

Impact On Ratings

It is likely that the proposed changes, which represent a significant change to the criteria for rating high investment-grade classes, will prompt a considerable amount of downgrades in recently issued (2005-2008 vintage) CMBS. Classes up through the most senior tranches of outstanding deals (so-called "A4s," "dupers," or "super-duper seniors") are likely to be affected. Our preliminary findings indicate that approximately 25%, 60%, and 90% of the most senior tranches (by count) within the 2005, 2006, and 2007 vintages, respectively, may be downgraded. We believe these transactions are characterized by increasingly more aggressive underwriting than prior vintages. Furthermore, recent vintage CMBS, particularly those issued since 2006, were originated during a time of peak rents and values, and as such, may be more affected by the proposed rental declines discussed in this RFC. We are currently evaluating the impact of the potential criteria changes on conduit/fusion CMBS transactions from all vintages. Once we evaluate the potential impact on existing ratings, we expect to issue a follow-up publication to this RFC.

Defining Our New Rating Stresses

Securities rated 'AAA' must, in our view, possess an extremely strong capacity to make all interest and principal payments. Developments in the commercial real estate sector have caused us to re-evaluate the commercial property stresses that we associate with the 'AAA' rating category. In particular, the swift and severe deterioration in commercial real estate fundamentals, combined with declining values, has prompted the re-evaluation. We believe that securities rated 'AAA' should be able to withstand significantly more stressful economic conditions than we

have faced over the previous few years.

I. Summary Of The Prototypical Pool Used In This RFC

Table 1

Prototypical CMBS Conduit/Fusion Pool			
100 loans	S&P LTV: 85%		
Top 5: 25%; Top 10: 35%; Top 15: 45%	S&P DSC: 1.3x		
Loan constants	10-year term with 30-year amortization		
Retail: 8.25%			
Office: 8.25%			
Multifamily: 7.75%			
Lodging: 10.00%			
Industrial: 8.50%			
Property mix		Geographic mix	
Property type	(%)	MSA	(%)
Retail	32.5	New York	16
Office	32.5	Los Angeles	7
Multifamily	15	Washington D.C.	7
Lodging	10	Chicago	4
Industrial	10	Houston	3
		Atlanta	3
		Boston	3
		Dallas	3
		Phoenix	3
		Philadelphia	3
		Las Vegas	2
		San Diego	2
		Orange County	2
		Seattle	2
		Denver	2
		Orlando	2
		San Francisco	2
		Baltimore	2
		Detroit	2
		Other	31 (no other MSA > 1%)

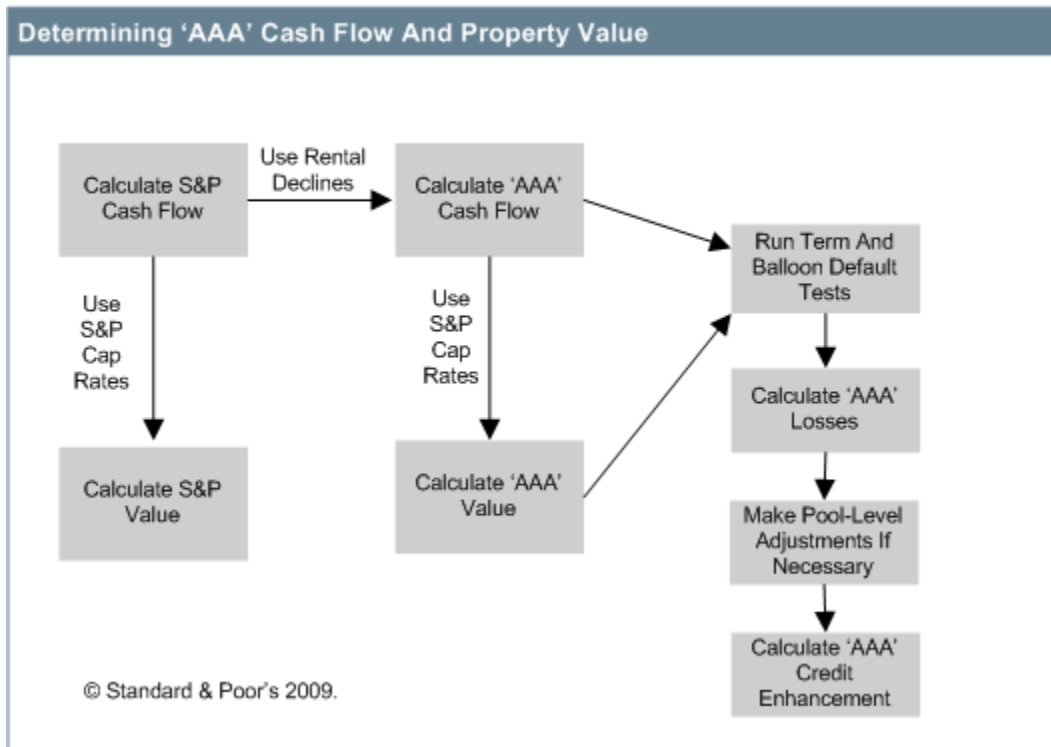
Note: We realize that most pools will have a small percentage of their balance composed of other property types, but for simplicity, the prototypical pool includes only the five major property types.

We designed the "prototype" pool we used in this RFC in several steps. The geographic and property type mixes are averages based on the population of outstanding deals. Characteristics such as an 85% S&P loan-to-value (LTV) and 1.3x debt service coverage (DSC) (based on S&P NCF), with no interest-only loans, reflect our view that future underwriting will likely be more conservative than in the recent past. In fact, we have found that pools with S&P LTVs and DSC at approximately the aforementioned levels are reminiscent of originations in the early 2000s. Lower

concentrations in the five and 10 largest loans reflect the fact that larger assets are more difficult to finance in the current environment. If the pools backing actual transactions eventually differ so markedly from the prototype pool that its use as a benchmark becomes significantly diminished, we may update the prototype pool—and its associated credit enhancement benchmarks—to preserve the functional utility of the prototype.

II. Determining 'AAA' Cash Flow And Property Value

Chart 1



A. Standard & Poor's NCF

The process begins with the determination of the S&P NCF for each property. S&P NCF is calculated by making selected adjustments to the cash flows provided by the issuer, as described in "CMBS Property Evaluation Criteria" (January 2004). Essentially, the following key variables are examined and potentially modified to arrive at what we consider to be a sustainable level of cash flow for the property.

- Occupancy levels: in-place and market levels are considered;
- Rental rates: should reflect market conditions;
- Operating expenses: should be supported by historical performance and should reflect expense ratios consistent with similar properties;
- Capital expenditures: must be adequate, in our view, to maintain the condition of the property; and
- Leasing costs: must be sufficient, in our view, to retain existing tenants and attract new ones.

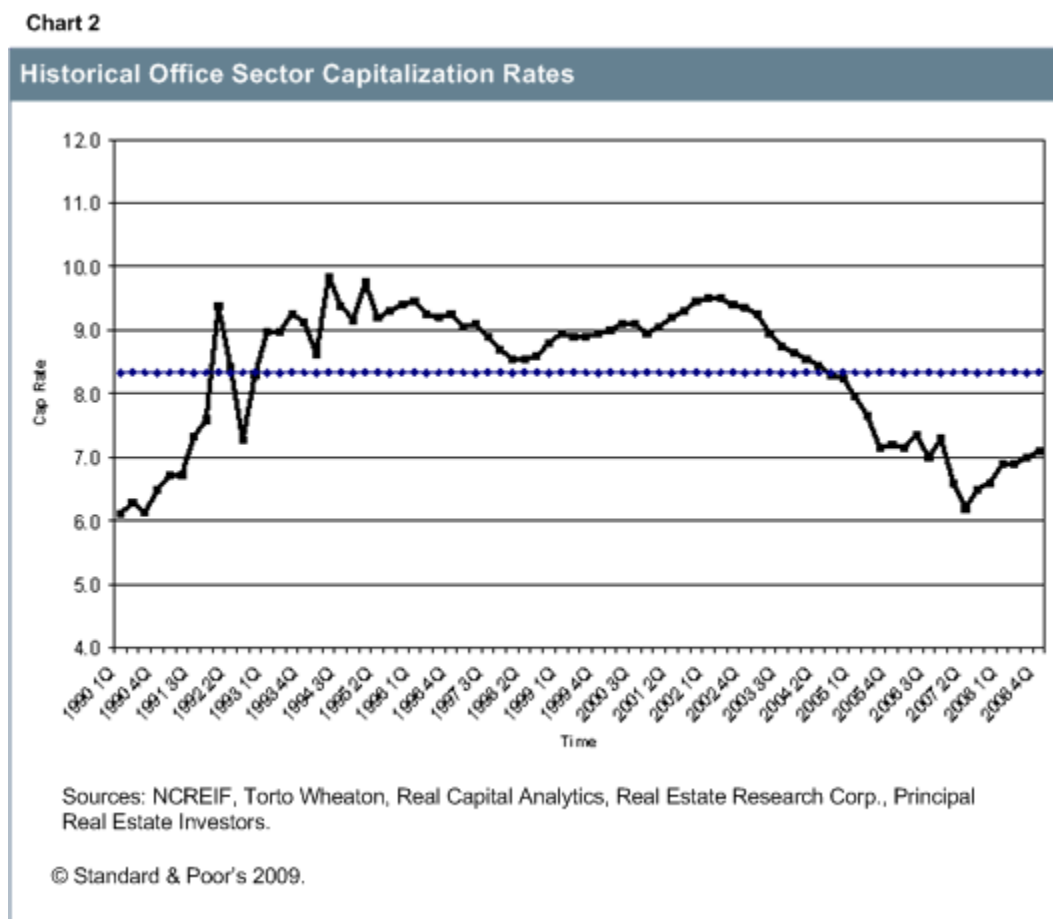
B. S&P capitalization rates and S&P Value

The S&P Value is determined by direct capitalization of the S&P NCF using the capitalization rates in Appendix A of this report. We arrive at these based on (i) a benchmark level for each property type derived from about 19 years of historical data provided by various third-party vendors (e.g., Real Capital Analytics) and industry reports and (ii) adjusting the benchmark levels in relation to our own views pertaining to property quality, market/location, etc. The objective is to use capitalization rates (cap rates) that measure average long-term value over an entire real estate cycle, rather than using whatever the prevailing market capitalization rates happen to be.

C. How did we select capitalization rates?

The following example illustrates how we arrived at our cap rates in the office sector.

First, we looked to historical data to establish a benchmark.



We calculated the average value for office cap rates over this period to be about 8.33%. As one can see in Appendix A, we value standard office properties using cap rates between 8.0% and 9.5%. We selected the different rates within that range based on considerations such as real estate quality, market size (historically, office properties in large metro areas like New York and Washington, D.C., have displayed better price performance than smaller metro areas), location (suburban vs. central business district (CBD)), etc. We left a buffer of plus or minus 25 basis points for other considerations/intangibles like age, tenant composition, rental/lease structure, etc. The results are shown in

table 2.

Table 2

Office Cap Rates	
Area	(%)
Class A - New York City CBD	8.25 ± 0.25
Class B – New York City CBD	8.75 ± 0.25
Class A – Washington, D.C., CBD	8.50 ± 0.25
Other CBD	9.00 ± 0.25
Suburban NYC and Washington, D.C.	9.00 ± 0.25
Other suburban	9.25 ± 0.25

CBD--Central business district.

D. S&P NCF and S&P Value represent the 'BBB' stress

The S&P Value is, in our opinion, a conservative estimate of what a commercial property should sell for. Historically, there has been significant variance between S&P Values and the market values determined by appraisers. Based on the weighted average variances from market values for a number of representative transactions, we have concluded that there is an inherent 'BBB' stress built into the S&P Value (see table 3). This stress can be quantified by roughly a 25% drop in total value of a property stemming from both the use of S&P NCF (more conservative than those provided by issuers) and the use of S&P cap rates (instead of market cap rates).

Table 3

Standard & Poor's Value Vs. Market Value Appraisal	
Year	Variance (%)
2003	23
2004	23
2005	27

We use a multipronged approach to determine credit support amounts for the 'BBB' rating level. We take the greatest value determined in up to four different ways. First, we use the S&P Value and S&P NCF and apply the same default tests that we use in the determination of 'AAA' credit support amounts described below. This approach may imply relatively low 'BBB' credit enhancement levels if only a very small portion of loans trigger the default conditions at their S&P Values and S&P NCFs.

Second, in cases where we perceive significant exposure to the above-average rental volatility of key metropolitan statistical areas (MSAs), we may use our newly developed stochastic commercial real estate model to estimate that risk. The model is based on nearly 30 years of data on rents for different property types in different MSAs. The model captures important differences in the historical volatility of rents in different markets. It helps us discern those differences by simulating future rental changes. Our tests have shown that the model provides reasonably reliable predictions over time horizons of up to three years. We can use the model to project the future path of S&P Value and S&P NCF for each loan in a pool and then apply the regular default tests. We can thus produce a second measure for a deal's 'BBB' credit enhancement amount.

Third, we apply a floor based on the 'AAA' credit enhancement amount. The floor is based on the historical relationship between 'AAA' and 'BBB' credit enhancement levels, and is arrived at through the formula:

$$\text{Credit_Enhancement}_{\text{BBB}} = 0.5 \text{ Credit_Enhancement}_{\text{AAA}} - 4$$

Thus, our prototype pool, which is calibrated to a 'AAA' credit enhancement level of 20%, would require at least 6% credit enhancement at the 'BBB' rating. Finally, for special or unusual situations, analysts may qualitatively determine a 'BBB' credit enhancement amount that is higher than indicated by any of the first three methods.

E. 'AAA' NCF and 'AAA' Value

To determine the 'AAA' stressed NCF ('AAA' NCF) we apply an additional stress to the rental cash flow underlying the S&P NCF. The amount of additional rent decline varies by property type (see table 4). Additional adjustments may be made for factors such as geographical location (e.g., a primary coastal market vs. an inland tertiary market) and building quality (e.g., class A, class B, class C).

Table 4

Additional Stress To Rental Cash Flow To Produce 'AAA' NCF From S&P NCF			
Property type	Worst three-year cumulative rent decline nationally (%)	Average worst three-year rent decline by MSA (%)	Proposed 'AAA' stressed rent decline (%)
Office	20	22	29
Retail	2	12	24
Industrial	10	21	23
Multifamily	+0.5	4	6
Lodging		20	25

NCF--Net cash flow.

The additional rent declines are calibrated to produce a 'AAA' credit enhancement level of 20% for the prototypical conduit/fusion pool described in table 1. The additional declines are designed to substantially exceed the worst national three-year decline and to exceed hypothetical nationwide stresses equal to the simultaneous occurrence in each local market of the worst three-year rental decline observed during the past 25 to 30 years. The proposed 'AAA' rent decline applies an incrementally higher decline based on our assessment of the type of declines that might occur in a period of extreme stress. We primarily used data from Torto Wheaton Research to determine the worst three-year rental declines in local markets. The three-year timeframe was used to reflect that commercial real estate is most vulnerable to the type of sustained declines in income that would generally result from extended periods of severe economic stress. Our assessment of potential declines in periods of extreme stress was also informed by the long-term historical experience of both U.S. and foreign real estate markets. In particular, we noted the experience of the Japanese commercial property market, where land prices have been declining for 18 consecutive years and are now 72% below their 1991 high on a nationwide basis.

We will apply the additional rent declines described above to rental cash flows when we determine the 'AAA' NCF. Consideration will be given to the relationship of in-place rents to current rents to avoid "double-stressing" a building with below market rents.

Determining 'AAA' Value is very similar to determining S&P Value (i.e., value under 'BBB' stress). The 'AAA' NCF is simply divided by the S&P cap rates described in the previous sections and in Appendix A.

In an 'AAA' stress environment, we expect that most leases will adjust to market levels either through expiration, renegotiation, or tenant bankruptcy. Multifamily properties typically have one-year leases, and we expect those leases to reset to stressed market levels annually. Similarly, we expect room rates for hotels to reset to stressed market levels on an almost daily basis.

Office, retail, and industrial properties, however, are generally subject to long-term leases, and we expect these leases to reset to stressed market levels within five years. In our cash flow analysis, we will derive an alternate, less stressful, NCF to calculate DSC and related stresses (the "'AAA' Alternate NCF"). The separate calculation is based on 60% of the leases resetting to stressed market levels over three years. However, we will continue to use the 'AAA' NCF, with all leases reset to stressed market levels, to determine the 'AAA' Value because it is unlikely that a purchaser would attribute much value to above-market leases in a declining rent environment. An example of how the 'AAA' NCF, 'AAA' Value, and 'AAA' Alternate NCF are determined is shown in table 5.

Table 5

Suburban Office Building Analysis			
(\$600,000 balance, 7% rate, with 30-year amortization)			
	S&P NCF for DSC and value ('BBB')	'AAA' NCF	'AAA' Alternate NCF
Effective gross income (\$)	100,000	71,000	82,600
Fixed expenses (\$)	31,000	31,000	31,000
Variable expenses	11,500	8,200	9,500
NCF (\$)	57,500	31,800	42,100
Value (\$)	621,622	343,784	Not applicable
LTV (%)	97	175	Not applicable
DSC (x)	1.20	Not applicable	0.88

NCF--Net cash flow. LTV--Loan-to-value. DSC--Debt service coverage.

To further explain the adjustments in table 5, the S&P NCF derived in the second column represents our basic analytic approach to commercial real estate. NCF is determined by subtracting fixed and variable expenses from effective gross income (EGI). The S&P Value is derived by dividing S&P NCF by a cap rate (9.25% in the example). The LTV is determined by dividing the loan balance by the S&P Value. The DSC is determined by dividing the NCF by the annual debt service (\$47,902 in the example).

The third column in table 5 represents the calculation of the 'AAA' NCF used to determine the 'AAA' Value and LTV. In this analysis, the EGI is reduced by the 'AAA' office stress of 29%. Fixed expenses remain unchanged. However, since variable expenses are a function of EGI, they decline proportionally with EGI. The 'AAA' Value and LTV are also determined using the 'AAA' NCF.

The fourth column in table 5 represents the calculation of the Alternative 'AAA' NCF used to determine the 'AAA' DSC. Here, the EGI represents a scenario where 60% of the EGI has declined based on the 29% 'AAA' office stress and 40% of the EGI remains unchanged because all in-place leases haven't reset to market levels yet. Since not all EGI has declined in column 4, variable expenses haven't declined as much as in the third column either.

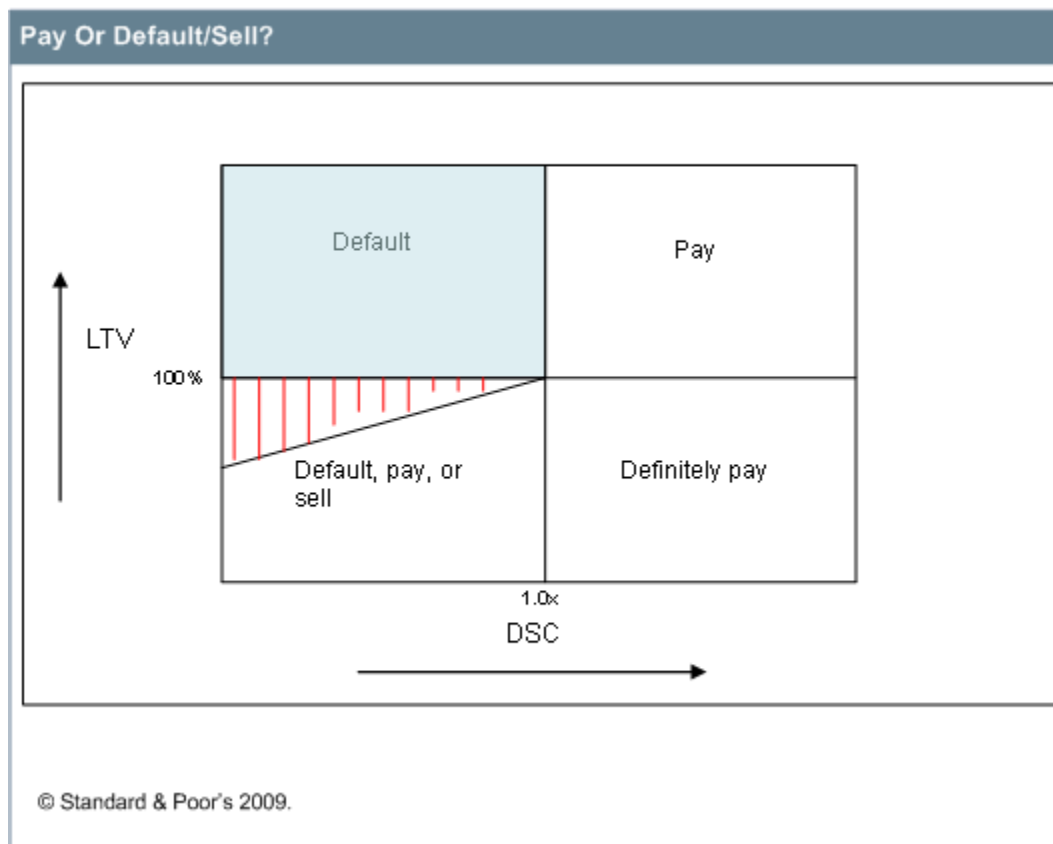
III. Loan Default Tests

A. Term defaults

The tests for a term default at the 'AAA' level are as follows:

- The simplest default condition is when the DSC, based on 'AAA' Alternate NCF, is below 1.0x and the LTV, based on the 'AAA' Value, is greater than 100% (the upper left quadrant of chart 3).
- However, there are other conditions for default. Default can also occur if the property cannot cover its debt service (i.e., $DSC < 1.0x$) but the borrower still retains some equity (i.e., $LTV < 100%$) (the bottom left quadrant of chart 3). There are several points to consider in this "quadrant." First, a borrower will generally only pay out of pocket if there is an expectation that there is sufficient equity to protect. Second, at some point the borrower can simply sell his property to cover the remaining debt. Third, there are significant transaction costs associated with the sale of a property (we assume 5% of the value of the property). Thus, we believe that (i) the red shaded section above the diagonal line in chart 3 contains likely defaults and (ii) the area below the line contains loans for which the borrower is likely to continue paying or sell the property to cover the debt (a rent controlled property is an example of how low DSC and low LTVs can co-exist). Last, we recognize that very fluid, dynamic choices exist for properties within this quadrant, and the decision to pay one month may change to default the month after.

Chart 3



Accordingly, in calculating whether loans suffer term defaults, the conditions for default can be summarized as follows:

1. If $LTV > 100\%$ and $DSC < 1.0$; or
2. If $90\% \leq LTV \leq 100\%$ and $DSC \leq LTV$.

The default condition for $LTV > 100\%$ and $DSC < 1.0x$ corresponds to the light blue shaded area in chart 3. The other default condition corresponds to the red shaded area in the lower-left quadrant of the chart (not drawn to scale).

B. Balloon defaults

We will test loans that do not default during their terms for balloon, or maturity, defaults. If a loan's 'AAA' LTV at maturity, based on the amortized loan balance, is greater than 100%, the loan will default at its maturity date.

IV. Calculating 'AAA' Losses And 'AAA' Credit Enhancement

A. 'AAA' term loss

The 'AAA' term loss = 'AAA' Value – (outstanding principal balance + two years of lost interest + foreclosure expenses)

Foreclosure expenses are typically 5% of the value of the property; and the two years of lost interest represent an average time between default and ultimate resolution of a distressed property. The outstanding loan amount will be determined after subtracting scheduled amortization (if any) from the current loan balance.

B. 'AAA' balloon (maturity) loss

The 'AAA' balloon loss = 'AAA' Value – (outstanding principal balance + two years of lost interest + foreclosure expenses)

C. 'AAA' credit support

We define 'AAA' credit support as the sum of the 'AAA' term and balloon losses divided by the total loan balances.

V. Calculating 'AA', 'A', 'BB', And 'B' Losses And Credit Enhancement

We set "benchmark" levels for 'AAA', 'BBB', and 'B' credit enhancement levels, and interpolate for the remainder of the rating categories. We will use a multipronged approach to determine credit support amounts for the 'B' rating level, which is similar to our approach for determining 'BBB' credit enhancement. We will rely primarily on a forward-looking forecast of rents to determine our expected case. In general, our expected loss will be zero for loans in markets with stable and improving forecasts. However, we will expect losses on loans in markets with negative forecasts. The expected case will be compared with the output of our stochastic commercial real estate model. In both cases, we will increase the required credit support at the 'B' rating for any loan that doesn't comply with our legal criteria ("U.S. CMBS Legal and Structured Finance Criteria," dated May 1, 2003, on RatingsDirect). Finally, since nearly all CMBS pools incur some trust expenses during their lives, we will look for a minimum credit enhancement of 1.5% at the 'B' rating level. The required credit support will be the highest of the expected loss, the output of the stochastic model, and 1.5%. Please see the Surveillance section below for the calculation of expected losses.

VI. 'AAA' Credit Enhancement And Concentration Adjustments

Applying the methodology outlined above will yield credit support levels for a diversified pool of mortgage loans. The prototypical CMBS conduit/fusion pool that is described above represents the average property and geographic mixes found in the universe of U.S. CMBS loans Standard & Poor's rates. Actual CMBS pools that closely resemble the prototypical CMBS pool would be expected to have credit support of 20% at the 'AAA' rating level. We also plan to set a credit enhancement floor for pools with exceptional credit quality (higher DSC, lower LTVs, little or no allowance for additional subordinate debt, etc.) at the greater of 10% or the combined percentage balance of the two largest loans currently in the pool based on the cut-off principal balances of those loans. The rationale for the floor is twofold. First, we are of the view that the minimum 'AAA' credit enhancement should provide an adequate buffer against systemic shocks. Second, we believe that a 'AAA' rated class should generally be able to survive some level of event risk, such that the default of the two largest loans with no recoveries does not cause a principal loss at the 'AAA' level. The floor would continue to apply over the life a deal, but would not apply to defeased loans.

Standard & Poor's will measure the relative geographic concentration of the CMBS pools being rated to the prototypical pool and make adjustments in credit support, either up or down, for pools that differ from the prototypical pool. Note that the prototypical pool is already well diversified, and that there will be little extra benefit for further diversification. However, a lack of diversification may result in significantly higher pool-level credit enhancement figures. For example, if a pool has significantly less than 100 loans or is heavily concentrated in a few MSAs, then it may require significantly more credit enhancement. Appendix B discusses the concentration adjustment factor and how we calculate it.

VII. Single-Borrower And Large-Loan Transactions

We propose to retain our current criteria for rating single-borrower and large-loan transactions. We will determine our ratings by testing the S&P Value against LTV thresholds at each rating category. The LTV thresholds are a function of property type, amortization, and all-in debt, including B notes and mezzanine debt. The LTV thresholds for a single-borrower transaction secured by an office building are shown in table 6.

Table 6

Single Borrower Transaction LTV Thresholds For An Office Building	
Rating	LTV (%)
AAA	56
AA	61
A	66
BBB	71

LTV--Loan-to-value.

The thresholds in table 6 are based on a loan with a 10-year term with a 30-year amortization schedule and no subordinate debt.

We will test the resiliency of our single-borrower and large-loan transactions by confirming that a class with a 'AAA' rating will maintain a DSC of more than 1.0x under the 'AAA' NCF stress.

VIII. Surveillance

Standard & Poor's monitors its portfolio of rated CMBS on an ongoing basis in an effort to identify potential credit risks. The monitoring process uses screening tools to generate exception reports. The exception reports are generated on a periodic basis to identify transactions that may require a comprehensive rating review.

The exception reports capture many performance attributes. Key fields include loan delinquencies, interest shortfalls, realized losses, loan payoffs, and defeasances. The reports also identify a given pool's exposure to specially serviced loans and loans on the servicer's watchlist.

A transaction may also be identified for review if we believe that "adverse selection" has occurred in the underlying collateral. This situation may arise near the end of a transaction's life, when the better-performing loans have paid off, which may leave the subperforming assets. While the credit support available for the remaining rated classes may be proportionately higher than at the deal's inception, the pool's composition could be weaker.

Comprehensive rating reviews currently involve:

- A review of pool-level characteristics;
- An estimation of losses for specially serviced loans, loans with low DSC, and other loans that are at heightened risk of default;
- A revaluation of 10 largest loans and other significant loans in conduit/fusion pools and all loans in large-loan and single-borrower transactions;
- An evaluation of pool liquidity; and
- An Evaluation of the impact of estimated losses and related recoveries on the transaction's capital structure.

We propose to enhance the comprehensive review process by incorporating the concepts of forward-looking rental declines to servicer NCF in our transaction review process. This will include updating the required credit enhancement for each transaction based on actual and estimated losses and changes in the performance of the mortgaged properties.

A. Review of pool characteristics

Since CMBS deals are backed by non-homogenous pools of commercial real estate loans, our surveillance process largely focuses on individual asset analysis. However, we also consider pool-level data credit characteristics. Pool-level data includes stratifications by various factors such as DSC, LTV, loan rate type (amortizing or period IO), maturity year, property location, and property type. We also consider financial statement collection rates, cumulative losses, appraisal reduction amounts (ARAs), corrected mortgage loans, defeasance status, and loan coupon data.

B. Estimating losses for specially serviced loans, loans with low DSC, and other loans that are at heightened risk of default

Loans that have been transferred to special servicing, loans with low DSC, and loans at risk of having low DSC (based on our outlook) typically receive closest scrutiny. For specially serviced assets, Standard & Poor's focuses on estimating losses upon liquidation. In the case of loans with low DSC, we focus on estimating losses on loans that we believe are at increased risk of default. A loan may be deemed to be at increased risk of default if it has a DSC under 1.0x or is at risk of falling below 1.0x. We identify these loans by reviewing stratifications of the pool, the servicer's watchlist, and examining a pool's tenant exposure. For example, a servicer's watchlist may indicate that a

property will lose its sole tenant due to bankruptcy, which would put a loan at risk of imminent default. Other loans may be considered to be at heightened risk of default if they fail to report financial information, have near-term maturities, or have weak financial performance associated with them.

Standard & Poor's estimates losses for specially serviced loans, loans with low DSC, and other loans at heightened risk of default by subtracting the outstanding principal balance plus an allocation for advancing, servicing expenses, and foreclosure expenses from our estimate of the property market value. To arrive at our estimate of property value, we consider recent appraisal values, broker opinions of value, comparable sales in the market, and recent financial information. In cases where this data is limited, we derive a loss using the latest information from our historical default and loss study. This may be necessary for loans that have not reported recent financial information.

C. Top 10 loans and other significant loans in conduit/fusion transactions and all loans in large-loan and single-borrower transactions

Our surveillance process also includes a detailed evaluation of the 10 largest loans and other significant loans in conduit/fusion pools as well as all loans in large-loan and single-borrower transactions. During the past few years, the top 10 loans have typically represented 40% or more of a conduit/fusion trust's collateral balance. Because a material change involving any of the 10 largest loans or any other significant loan in a conduit/fusion pool or any loan in a large-loan or single-borrower transaction can have a meaningful impact on a transaction's credit quality, these loans warrant a heightened level of review.

Standard & Poor's reviews the operating statement analysis reports (OSARs) for the 10 largest loans and for other significant loans in conduit/fusion pools and all loans in large-loan and single-borrower transactions. We also review servicer inspection reports to see that there are no deferred maintenance items or other factors that may adversely affect property performance. In some cases, Standard & Poor's may inspect the collateral. When a mortgaged property securing (i) a top-10 loan, (ii) any other significant loan in a conduit/fusion pool or (iii) any loan in a large-loan or single-borrower transaction has experienced significant changes in performance, whether positive or negative, we propose to update the S&P NCF, S&P Value, 'AAA' NCF, 'AAA' Alternate NCF, and 'AAA' Value for the loan.

Regardless of performance, we propose to update the S&P NCF, S&P Value, 'AAA' NCF, 'AAA' Alternate NCF, and 'AAA' Value for most loans that have credit characteristics consistent with investment-grade rated obligations (IG loans) either at issuance or as of our last surveillance review, whether these loans are among the 10 largest or not. For large loans with less than one year of seasoning, we may rely on the determinations at the time of issuance if there has been no material property-level change.

D. Liquidity analysis

Liquidity concerns are particularly important when analyzing a CMBS transaction containing troubled loans. Appraisal subordinated entitlement reductions (ASERs) and nonrecoverability determinations generally affect a transaction's liquidity. An unexpected decline in a property's value can cause a nonrecoverability determination or an increased ASER amount. This scenario may lead to unanticipated cash flow interruptions to one or more of the rated certificates. These situations, along with accumulated special servicing fees, can result in downgrades to the affected classes.

Defeased loans are also considered in the overall analysis. In the defeasance process, the payment streams on these loans are typically replaced with a payment stream of noncallable defeasance collateral, such as direct obligations of

the U.S. government or government-sponsored agencies. Provided a defeased loan was never with the special servicer, the loan will be resized to 'AAA', and will not necessitate credit support at or below that level. If the loan was previously specially serviced, credit support will be required for any corrected mortgage loan fees that will affect the trust over the loan term.

E. Evaluating the impact of estimated losses and related recoveries on the transaction's capital structure

We evaluate the impact of projected losses on a transaction's capital structure. The resulting credit enhancement levels are compared with the actual credit enhancement for each tranche to arrive at rating adjustments.

Standard & Poor's proposes to revise expected loss for each transaction based on our forecast of market conditions. To do so, for purposes of our analysis, we will arrive at S&P NCF by adjusting servicer-reported net operating income (NOI) for each mortgage property in the loan pool to include reserves, in a manner consistent with the approach described in our CMBS Property Evaluation Criteria. We will then stress this figure using the methodologies described for rating new transactions, with adjustments for cyclicity described below. We will use the S&P NCFs to update the required credit support required for a transaction. The updated credit support levels will be compared with actual credit enhancement after projected losses are flowed through a deal's waterfall for loans in default or at risk of imminent default. We will then make rating adjustments to underenhanced certificates.

The stresses to rental cash flow described in table 4 represent declines from peaks in normal real estate cycles. To account for the cyclicity of property markets in our surveillance process, we propose to use a rent index for each property type based on national average rents reported by Torto Wheaton Research. The rent index is the ratio of average rent in any given year to the average rent in a base year. The Torto Wheaton data shows that commercial real estate rents peaked in 2008 for most property types. As such, we have set 2008 as our base year for the rent index. An example of how the rent index is calculated is shown in table 7.

Table 7

Calculation Of Office Rent Index For 2006	
Average effective office rent 2008 (\$ per sq. ft.)	23.64
Average effective office rent 2006 (\$ per sq. ft.)	19.69
2006 office rent index	.83

The rent index for each property type from 2000 to 2008 is shown in table 8.

Table 8

Rent Index					
Vintage	Office	Retail	Multifamily	Industrial	Lodging
2000	.87	.80	.94	.73	.81
2001	.98	.83	.91	.81	.76
2002	.87	.84	.87	.80	.70
2003	.80	.85	.86	.78	.66
2004	.78	.87	.88	.79	.74
2005	.80	.92	.92	.82	.83
2006	.83	.95	.96	.89	.92
2007	.89	.98	.99	.96	.97
2008	1.00	1.00	1.00	1.00	1.00

To determine the stress to apply to rental cash flow for a particular loan in a surveillance review, we multiply the index for that property type in the year the loan pool was securitized (from table 8) by the additional rent stress for that property type in table 4.

It is our view that this proposal will better integrate Standard & Poor's new issue and surveillance analysis, increasing the harmonization between our new issue rating and surveillance methodologies. We believe that this will increase the stability of ratings over time, especially at the higher rating categories.

Related Research

- "Principles-Based Rating Methodology For Global Structured Finance Securities," published May 29, 2007.
- "Scenario Analysis: Standard & Poor's Expects the Downgrade Risk to be High for Recent-Vintage U.S. CMBS Transactions," published April 6, 2009.
- "Default Study: North American CMBS Defaults Rise In 2007, With More Expected In 2008 And 2009," published July 17, 2008.
- "CMBS Property Evaluation Criteria," published January 2004.
- "U.S. CMBS Legal and Structured Finance Criteria," published May 1, 2003.

All criteria and related articles are available on RatingsDirect, the real-time Web-based source for our credit ratings, research, and risk analysis, at www.ratingsdirect.com. The criteria can also be found on our Web site at www.standardandpoors.com.

These criteria represent the specific application of fundamental principles that define credit risk and ratings opinions. Their use is determined by the issuer-specific or issue-specific attributes as well as Standard & Poor's Ratings Services' assessment of the credit and, if applicable, structural risks for a given issuer or issue rating. Methodology and assumptions may change from time to time as a result of market and economic conditions, issue-specific or issuer-specific factors, or new empirical evidence that would affect our credit judgment.

Appendix A: Capitalization Rates By Property Type

Appendix Table 1

Capitalization Rates By Property Type		
Property type	Subtype	Capitalization rate (%)
Multifamily	Class A - Manhattan	7.75 ± 0.25
	Class A - Calif.; good Manhattan	8.00 ± 0.25
	Above average to average other than Manhattan and Calif.	8.25 ± 0.25
	Below average	8.50 ± 0.25
	Student housing	8.75 ± 0.25
Manufactured housing		8.50 ± 0.25
Office	Class A - New York City CBD	8.25 ± 0.25
	Class B – New York City CBD	8.75 ± 0.25
	Class A – Washington, D.C. CBD	8.50 ± 0.25
	Other CBD	9.00 ± 0.25
	Suburban NYC and Washington, D.C.	9.00 ± 0.25
	Other suburban	9.25 ± 0.25

Appendix Table 1

Capitalization Rates By Property Type (cont.)		
	Medical office on hospital grounds	9.25 ± 0.25
	Other medical office	9.50 ± 0.25
	Surgical medical (rents higher than medical office)	11.00 ± 0.25
Retail	Anchored	9.00 ± 0.25
	Unanchored (all tenants < 10,000 sf)	9.50 ± 0.25
	Power center	9.00 ± 0.25
	Mall – sales > \$750 psf; occupancy cost ≤ 15%	7.25± 0.25
	Mall – sales > \$600 psf; occupancy cost ≤ 15%	7.50± 0.25
	Mall – sales > \$500 psf; occupancy cost ≤ 15%	7.75± 0.25
	Mall – sales > \$400 psf; occupancy cost 13% - 15%	8.00± 0.25
	Mall – sales > \$350 psf; occupancy cost 13% - 15%	8.25± 0.25
	Mall – Sales > \$300 psf; occupancy cost 13% - 15%	8.50± 0.25
	Mall – Sales > \$250 psf; occupancy cost 13% - 15%	8.75± 0.25
	Mall – Sales < \$250 psf; occupancy cost ≤ 10%	9.00± 0.25
	Unenclosed outlet center – sales > \$450	9.25± 0.25
	Unenclosed outlet center – sales > \$400	9.50± 0.25
	Unenclosed outlet center – Sales > \$350	9.75± 0.25
	Unenclosed outlet center – sales > \$300	10.00± 0.25
	Unenclosed outlet center – sales > \$200	10.25± 0.25
	Unenclosed outlet center – sales ≤ \$200	10.50± 0.25
	Enclosed outlet mall	Add 0.25% to mall cap rate
	Lifestyle center	Add 0.25% to mall cap rate
	Free standing movie theater – sales > \$1 million/screen	10.00± 0.25
	Free standing movie theater – Sales > \$350,000/screen	10.25± 0.25
	Free standing movie theater – sales < \$350,000/screen	10.75± 0.25
	Free standing fitness center	10.50± 0.25
Warehouse	32 ft. clear heights	9.00± 0.25
	Other	9.25± 0.25
Industrial		9.25± 0.25
R&D/flex	Office > 50%	9.25± 0.25
	Office < 50%	9.50± 0.25
Self storage		10.00± 0.25
Parking lots/garages	CBD	9.75± 0.25
	Other	10.00± 0.25
Lodging	Recognized market leader in major MSA	10± 0.25
	Luxury and luxury resort in high land cost areas	10.25± 0.25
	Luxury and luxury resort in major MSAs with lower land costs	10.50± 0.25
	Full-service upscale (e.g., Ritz Carlton, Four Seasons)	10.50± 0.25
	Full-service, strong flag, major CBD	10.75± 0.25
	Full-service, strong flag (e.g., Marriott, Westin)	11.00± 0.25
	Full-service, average (e.g., Radisson, Hilton, Sheraton)	11.25± 0.25
	Good quality extended stay	11.75± 0.25

Appendix Table 1

Capitalization Rates By Property Type (cont.)		
	Other extended stay	12.00± 0.25
	Good quality limited service	12.00± 0.25
	Other limited service	12.25± 0.25
Health care	Independent living	9.75± 0.25
	Assisted living	11.00± 0.25
	Skilled nursing	13.50± 0.25

PSF--Per square foot. MSA--Metropolitan statistical area. CBD--Central business district.

Appendix B: Pool Correlation Factors And Adjustments To Required Credit Enhancement

The prototypical pool consists of commercial mortgages secured by properties that are geographically diversified. As the concentration of the underlying mortgages in a CMBS increases, generally the overall default risk of the CMBS increases, because a localized economic downturn would have a greater impact on a concentrated pool than it would on a diversified pool of loans. To account for this risk, we will adjust the level of required credit enhancement as a function of the concentration.

We derived our proposed state-level concentration limits by looking at the cumulative distribution of historical commercial mortgage loans backing S&P rated U.S. CMBS securities by MSA.

The Herfindahl Index

Diversification, and conversely concentration, are not crisp measures—they are rather nebulous. The Herfindahl Index, also known as the *Herfindahl-Hirschman Index* is an often-used measure of economic diversity. This index is defined as:

$$H = \sum_{i=1}^N s_i^2$$

In this equation, s is the proportion of market share for company i . Generally, H is computed for the 50 largest companies in an industry and ranges between $1/N$ and 1. The *normalized Herfindahl Index* is defined as:

$$H^* = \frac{H - 1/N}{1 - 1/N}$$

The normalized Herfindahl Index ranges between 0 and 1. The U.S. Justice Department uses this index to help determine if specific mergers would create a lack of diversification in industries (antitrust cases). If entities were considering a merger, a comparison of the index pre-and post-merger would help assess if the merger would result in a significant concentration.

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Because we cannot expect that future mortgage loan originations will be distributed exactly as in the past, and we intend for our geographic adjustment factor to provide additional enhancement for overly concentrated pools, we propose the concentration limits outlined in table A for a pool distributed among 75 MSAs. Appendix Table 2 provides the long-term average percent of loan balances from each MSA (based on our surveillance book) and the proposed concentration limit. Based on the proposed limits, the Herfindahl Index for the prototype pool is 0.0458, and the normalized index is 0.033.

Appendix Table 2

Geographic Concentration Of Prototypical CMBS Pool	
MSA	Concentration (%)
New York	16
Los Angeles	7
Washington, D.C.	7
Chicago	4
Houston	3

Appendix Table 2

Geographic Concentration Of Prototypical CMBS Pool (cont.)	
Atlanta	3
Boston	3
Dallas	3
Phoenix	3
Philadelphia	2
Las Vegas	2
San Diego	2
Orange County	2
Seattle	2
Denver	2
Orlando	2
San Francisco	2
Baltimore	2
Detroit	2
Other	31

No other MSA > 1%.

The inverse of the Herfindahl Index has a helpful interpretation and is often used to count the effective number of MSAs over which the pool balance is distributed. If the distribution in the prototypical pool is uniform, then $1/H$ equals the "effective" number of MSAs. If the distribution is non-uniform, the effective number will be less than 75. For the prototypical pool in table A, the effective number of MSAs is 22. The more bar-belled the MSA allocation is, the lower the effective number of MSAs. For example, if New York loans comprise 70% of the pool balance and each of the remaining 74 MSAs has a 0.4% allocation, the effective number of MSAs would be two (as opposed to 75 for the prototypical pool).

If the effective number of MSAs in a pool is less than three, we would not use the adjustment calculation described below. Instead, we would use a qualitative adjustment based on market characteristics.

The same concept is applied to quantify the effective number of loans in the pool. If the effective number of loans is less than two, we would not use the adjustment calculation described below. Rather, we would use a qualitative adjustment based on market characteristics.

We assume that the prototypical pool would have 100 loans: the top five loans would cover 25% of the balance, the top 10 loans would cover 35%, the top 20 loans would cover 45%, and the remaining 80 loans would be equally distributed to cover 55% of the balance. The Herfindahl Index for the prototype pool by loans is 0.0193. It has a normalized figure of 0.1 and an effective number of loans of approximately 52.

We propose to normalize the effective number of MSAs and loans by taking the total number of MSAs and loans in the pool and then averaging the two metrics. For example, the effective number of MSAs is 22 and the effective number of loans is 52 for the prototypical pool. In this example, the normalized effective number of loans would be 30% ($22/75$) and 52%, respectively, and the average would be 41%. We define the concentration coefficient (CC) as the average of the normalized effective number of MSAs and loans.

$$CC=0.5*\left(\frac{1/H_{geographical}(S)}{total_number_of_MSAs} + \frac{1/H_{loan_count}(S)}{total_number_of_loans}\right)$$

The CC is between zero and one. When it is close to zero, the pool is highly concentrated, and when it is close to one, the pool is highly diversified.

We propose to determine the final 'AAA' credit enhancement amounts for a CMBS deal by adjusting the sum of the raw credit enhancement amounts determined for each of the underlying loans. This would be applicable if the sum of raw credit enhancements is less than 50%.

$$Adjusted_CE_Amount_{AAA}(S)=\max\left\{\left[\sum Raw_CE_Amounts_{AAA}(S)\right]\times\max\left(95\%,\exp\left[\alpha(CC(S)-CC(S_0))\right]\right),50\%\right\}$$

Where S is the pool that is being analyzed and S_0 is the prototypical pool shown in table A.

α is a decreasing function of raw credit enhancement L that will be calibrated to control the boundaries of the incremental amount of credit enhancement attributable to geographic and loan balance concentration. In addition, we propose to apply a floor of 95% to the calculation of the adjustment factor, resulting in a maximum reduction in credit enhancement of 5% for better-than-average diversification.

Appendix C - Glossary

- 'AAA' Alternative net cash flow ('AAA' Alternative NCF) – The NCF used to determine DSC at 'AAA'. It is less stressed than the 'AAA' NCF.
- 'AAA' net cash flow ('AAA' NCF) - NCF that has been reduced by an additional stress factor beyond the stress inherent in the S&P NCF.
- Capitalization rate – The rate used to determine value in the direct capitalization approach to value. It represents an investor's desired return from a real estate property.
- Debt service coverage (DSC) – The ratio of a real property's NCF to the scheduled debt service expressed as a multiple (e.g., 1.2x).
- Direct capitalization – The method used to convert an estimate of a single year's income expectancy into an indication of value by dividing a real property's NCF by a capitalization rate.
- Effective gross income (EGI) – The anticipated income from all operations of a real property adjusted for vacancy.
- Loan-to-value (LTV) – The ratio between the amount of a mortgage loan and the value of the real property expressed as a percentage.

- Net cash flow (NCF) – EGI minus operating expenses minus reserves.
- Net operating income (NOI) – EGI minus operating expenses.
- Operating expenses – Expenses incurred in the normal operation of a real property, including, but not limited to, taxes, insurance, utilities, management fee and salaries.
- Reserves – Escrows to provide funds for tenant improvements, leasing commissions and capital replacements.
- S&P Net Cash Flow (S&P NCF) – The NCF derived using Standard & Poor's basic analytic approach for analyzing commercial real estate, as described in CMBS Property Evaluation Criteria.
- S&P Value – The value derived using Standard & Poor's analytic approach for analyzing commercial real estate – it is calculated by dividing S&P NCF by the appropriate capitalization rate by property type (see Appendix A). In general, The S&P Value, in our opinion, is a conservative estimate of what a commercial property should sell for.

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