

Guidance | Criteria | Corporates | Recovery:

Recovery Rating Criteria For Speculative-Grade Corporate Issuers

May 18, 2018

Overview And Scope

This guidance document accompanies our recovery rating methodology "Recovery Rating Criteria For Speculative-Grade Corporate Issuers," published Dec. 7, 2016, and provides additional information and guidance related to the analytical application of the methodology. It is intended to be read in conjunction with those criteria. For further explanation of guidance documents, please see the description at the end of this document.

Guidance

This report provides guidance on what guidelines are generally considered in assessing recovery ratings, as part of the criteria. These fall into the following key categories, which are used in the recovery criteria:

- EBITDA industry multiples,
- Discrete asset valuation haircut ranges,
- Sector-specific approaches, and
- Prepetition interest rate guidelines.

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- Originally published in Appendix 3 of "Recovery Rating Criteria For Speculative-Grade Corporate Issuers" on Dec. 7, 2016.
- Published as a guidance document on May 18, 2018. This guidance has not been revised since it was first published on Dec. 7, 2016.
- We may revise this guidance from time to time when market dynamics warrant reevaluating the variables we generally use in our recovery analysis.

EBITDA Industry Multiples

When assessing a company's enterprise valuation, we use the following median EBITDA industry multiples to derive the anchor recovery percentage (before making any adjustments using the recovery adjustment).

Table 1

EBITDA Industry Multiples

	Multiple (x)	Discount to S&P Capital IQ 15-year LTM to March 2015 (%)	S&P Capital IQ 15-year LTM to March 2015
Aerospace and defense	5.0	42	8.6
Agribusiness and commodity foods	5.0	39	8.2
Auto OEM	5.5	36	8.6
Auto suppliers	5.0	21	6.3
Branded nondurables	6.0	30	8.6
Building materials	5.0	33	7.5
Business and consumer services	5.5	37	8.7
Capital goods	5.0	41	8.5
Commodity chemicals	5.0	29	7.0
Consumer durables	5.0	39	8.2
Containers and packaging	5.0	29	7.0
Engineering and construction	5.0	26	6.8
Environmental services	6.0	36	9.4
Forest and paper products	5.0	36	7.8
Health care equipment	6.0	52	12.5
Health care services	5.5	41	9.3
Leisure and sports	6.5	33	9.7
Media and entertainment	6.5	34	9.9
Metals and mining downstream	5.5	36	8.6
Metals and mining upstream	5.0	42	8.6
Midstream energy	6.5	40	10.9
Oil and gas drilling, equipment, and services	5.5	39	9.0
Pharmaceuticals	6.5	47	12.2
Railroads and package express	5.5	36	8.6
Retail and restaurants	5.0	39	8.2
Specialty chemicals	5.5	34	8.3
Technology--hardware and semiconductors	6.0	42	10.3
Technology--software and services	6.5	44	11.7
Telecom and cable	6.0	38	9.6

Table 1

EBITDA Industry Multiples (cont.)

	Multiple (x)	Discount to S&P Capital IQ 15-year LTM to March 2015 (%)	S&P Capital IQ 15-year LTM to March 2015
Transportation cyclical	5.0	21	6.3
LTM--Last-12-month.			

As outlined in the criteria, we have derived these industry-specific EBITDA multiples by applying a discount to observed historical earnings multiples (market multiples) for nondistressed companies in the same industry. The market multiples were derived from 15-year last-12-month S&P Capital IQ valuation multiples to March 2015 for nondistressed companies.

In testing the portfolio of defaulted companies that S&P Global Ratings had rated, the higher haircuts to sectors with particularly high market multiples resulted in more accuracy and less variance than the alternative scenarios.

Financial services

We have derived these industry-specific EBITDA multiples by applying a discount to market multiples for nondistressed companies in the same industry. For asset managers and for a financial services finance company (FSFC), we generally start at 5.0x and sometimes scale these multiples up or down by up to one turn of leverage (for example, to 4.0x or to 6.0x) based on our judgment of the specific FSFC subsector or upon our view of the strength of the asset manager or of the FSFC's business risk profile.

Discrete Asset Valuation Guidelines

When assessing a company's enterprise valuation using the Discrete Asset Valuation approach, we typically use the following discounts and valuation ranges to derive the anchor recovery percentage (before making any adjustments using the recovery adjustment).

Aircraft

Shrinkage rates for fixed assets rely on the remaining life of the asset; depreciation rates (the depreciation factor is 1-depreciation rate) usually mirror the company's accounting assumptions for useful life.

For aircraft, we usually apply aircraft-specific depreciation and realization rates, which we update periodically. Table 2 details the realization and depreciation rates for commercial aircraft by life-cycle stage.

Table 2

Aircraft Annual Depreciation And Realization Ranges

Equipment	Shrinkage/depreciation (%)	Realization (%)
Highly desirable aircraft	5-9 per year	75-85
Desirable aircraft	9-10 per year	50-65
Less desirable aircraft	10-20 per year	25-40

Auto fleets

For auto fleet assets, we adjust net book values (NBVs) for expected disposal costs. We believe NBVs are a good reflection of disposal values, and so we only apply limited discounts to NBV. Debt facilities tend to be secured by individual vehicles with fleet reductions resulting in a similar reduction in debt financing. Consequently, we do not shrink assets on the path to default. We generally consider the depreciation and realization rates in table 3 for auto fleet assets.

Table 3

Auto Fleet Assets Depreciation And Realization Rates

Sector	Category	Shrinkage/ depreciation (%)	Realization (%)
Autos	Auto fleets--new	0	95
Autos	Auto fleets--used	0	90-95
Transportation	Rental fleets	0	85

Containers and chassis

For container assets, we use NBV (or appraised values, when available), depreciated to the year of default, and then adjust asset values based on the relative desirability of the container by type. We generally consider the following depreciation and realization rates in table 4 for container assets:

Table 4

Container Assets Depreciation And Realization Rates

Sector	Category	Shrinkage/ depreciation (%)	Realization (%)
Transportation	Shipping containers and chassis	4 per year	60-75

Intangibles

Generally, we assign no values to intangible assets. However, included as appropriate are intangibles that are unique to the business, readily identifiable, generally desirable, and where the value of the asset can be quantified through appraisal of the asset. Our valuations are determined by applying a realization estimate (from a range of distressed realizations) to third-party appraisals, where the realization rate selected reflects our estimate of the intangibles' value at emergence or liquidation. Table 5 below reflects the realization ranges that we generally apply to the appraised value of intangible assets.

Table 5

Intangible Assets Depreciation And Realization Rates

Sector	Category	Shrinkage/depreciation (%)	Realization (%)
All	General intangibles	0	0-70
Transportation	Routes	0	50-60
Transportation	Landing slots	0	50-75

Ships

For ship assets, we generally adjust the depreciated appraised ship value (to the year of default) based on the age and demand of the asset. Table 6 details the depreciation and realization rates for typical ship assets.

Table 6

Ship Assets Depreciation And Realization Rates

Sector	Category	Shrinkage/depreciation (%)	Realization (%)
Transportation	Barges and tow boats	0 - 7 per year	0 - 75
Leisure	Cruise ship	0-5 per year	0 - 85
Transportation	Drill ship	0-5 per year	0 - 75
Transportation	Cargo ships	0-5 per year	0 - 75

Real estate companies (homebuilders)

For homebuilders, we believe that at emergence, inventories (depending on the level of cash on hand) will generally be within 25% of current inventory levels. That's because we assume a certain level of cash is used to replenish, and/or fund the build-up of inventory. If liquidity is very tight (the homebuilder is unable to raise capital in the markets and/or if revolver capacity is fully drawn), we assume that it would need to raise cash by winding down its inventory at an accelerated pace.

After adjusting for any shrinkage in inventory levels, we consider the inventory realization rates and characteristics in tables 7 and 8.

Table 7

Inventory Realization Rate Ranges*

Inventory type	High (%)	Medium (%)	Low (%)
Completed homes / construction in progress	65-75	55-65	45-55
Land under development	55-65	45-55	35-55
Raw land	50-60	40-50	30-40

*Table 15 provides guidance as to what constitutes low, medium, and high.

Table 8

Inventory Realization Rate Characteristics

Inventory type	High	Medium	Low
Completed homes/construction in progress	-- Homes are priced at or below conforming loan limits -- Short cycle of time to completion -- Low level of speculative builds -- Higher mix of detached and attached houses	-- Homes are priced predominantly within conforming loan limits -- Short-medium cycle of time to completion -- Low-moderate level of speculative builds -- Moderate mix of detached and attached houses	-- Homes are priced above conforming loan limits -- Medium-long cycle of time to completion -- Low-high level of speculative builds -- Lower mix of detached and attached houses

Table 8

Inventory Realization Rate Characteristics (cont.)

Inventory type	High	Medium	Low
Land under development	-- Less amount of time and capital needed to complete improvements and renovation -- Low level of inactive/mothballed community land developments	-- Moderate amount of time and capital needed to complete improvements and renovations -- Low-moderate level of inactive/mothballed community land developments	-- Higher amount of time and capital needed to complete improvements and renovations -- Moderate to high level of inactive/mothballed community land developments
Raw land	-- Prime location -- Low level of entitlement requirements -- Recently acquired	-- Average location -- Moderate level of entitlement requirements -- Mothballed	-- Poor location -- Higher level of entitlement requirements -- Mothballed
Other factors that are applicable to all the above inventory types	-- Low geographic concentration -- Low lot supply -- Low level of impairments expected	-- Moderate geographic concentration -- Low-moderate lot supply -- Moderate level of impairments expected	-- Moderate to high geographic concentration -- Moderate to high lot supply -- Higher level of impairments expected

Terms used in table 8:

- Mothballed means development and marketing activity on a community property is put on hold or shelved.
- Low geographic concentration means that the locations of the home sites (community) are diversified into different markets and not concentrated in one or two. A high concentration could subject the homebuilder to more sensitivity to the demand in and the strength of that local economy.
- A low lot supply means that the homebuilder carries a low level of land inventory relative to other homebuilders. This signals that the homebuilder will likely sell those lots sooner and at or close to current prices, but also that it might need to acquire land at current prices as well. (At times of high demand or in markets that are short in land supply, it could mean that the homebuilder must acquire land at higher prices than other homebuilders, which could hold larger land supplies acquired years ago at perhaps discount prices.) Generally it takes about two years to get a community developed (including entitling the land, meaning getting all the regulatory approvals to build the community) from raw land into sellable lots that are ready for home construction. So homebuilders typically carry four to seven years of inventory in various phases of development. Those that are near completion, and thus require minimal additional capital, would likely carry a higher value than those that need a lot more time and capital for the phase to be completed. Model homes and speculative built homes that remain unsold for a relatively long period of time may carry lower values than homes that are contracted to be sold at completion.

Telecom: Towers

For telecom towers, we reference recent transaction values as a proxy for current market values. The current valuation is USD\$360,000 per tower when the towers involved conform to the standard format (capable of carrying multiple antennas and not built for a single purpose).

Telecom: Wireless spectrum

We generally consider the following depreciation and realization rates in table 9 for telecom assets:

Table 9

Telecom Asset Depreciation And Realization Rates

Sector	Category	Shrinkage/depreciation (%)	Realization	Source
Telecom	Wireless spectrum	0 per year	100% of spectrum (NBV) + 25% of network assets (NBV)	Expert judgment

NBV--Net book value.

The value derived from this calculation serves as a floor to the estimated emergence valuation, as we typically determine the emergence value using a multiple of expected emergence EBITDA.

Midstream oil refineries

For a refinery that we expect to remain in operation after a default, we will generally value the property, plant, and equipment (fixed assets) at a multiple of between USD\$2,000 and USD\$3,000 per barrel per day of refinery crude oil throughput capacity, depending on our assessment of the relative quality of the assets. These price multiples reflect average historical transaction prices, which we adjust for inflation, to back out the value of working-capital assets and to reflect distressed industry conditions, and that could change if future market conditions and empirical data justify that.

We will generally value oil storage terminals owned by oil refineries or operating independently at a price of \$25 per barrel of oil storage capacity. Higher or lower prices may be applicable based upon the location and other relevant features of the storage terminals and assumed prices could change if future market conditions and empirical data justify that.

Independent power producers (unregulated utilities)

We generally value independent power producers according to their power generation capacity (as measured in kilowatts (kW)) and an assumed valuation on a \$/kW basis (see table 10). The valuation range is by fuel type adjusted for 1) dispatch characteristics (baseload versus peaking), 2) the regional transmission organization (RTO) exposure of the power plant, and 3) the relative quality of the plant. We update our valuations periodically based on market trends and recent sales data, with assets that have been sold under conditions of duress having the most relevance.

Table 10

Guidelines For Valuing Independent Power Producers

\$/Kilowatt valuation	Fuel Source					
	Coal		Natural Gas		Nuclear	Unconventional
Dispatch Characteristics (DC) >>	Baseload	Peaking	Baseload	Peaking	N/A	N/A
PJM (regional transmission organization in Northeast U.S.)	225-325	25-75	300-400	125-175	500-650	200-400

Table 10

Guidelines For Valuing Independent Power Producers (cont.)

\$/Kilowatt valuation	Fuel Source					
	Coal		Natural Gas		Nuclear	Unconventional
Dispatch Characteristics (DC) >>	Baseload	Peaking	Baseload	Peaking	N/A	N/A
Independent Service Operator of New England (ISO-NE)	200-300	25-75	350-450	150-200	500-675	200-400
New York Independent Service Operator (NYISO)	175-275	25-75	250-350	75-125	500-650	200-400
The Energy Reliability Council of Texas, or ERCOT	150-250	25-50	225-325	50-100	500-600	200-400
Midcontinent Independent Service Operator (MISO)	175-275	25-50	250-350	75-125	500-600	200-400
California Independent System Operator (CAISO)	N/A	N/A	225-300	100-175	N/A	200-400
Southwest Power Pool (SPP)	150-250	25-50	250-350	75-125	450-600	200-400

N/A--Not applicable.

While we provide general guidelines based on the above parameters, we may adjust these based on plant-specific attributes, while assumed valuations could change if future market conditions and empirical data justify that. For instance, the following attributes, among others, could cause us to assess a value outside the listed range:

- Exposure to future environmental regulation, either positively (generally for zero-carbon nuclear or renewable assets) or negatively (generally for coal assets);
- Participation in a constrained zone within one of the aforementioned RTOs; Any kind of contractual protections (such as power purchase agreements or PPAs, tolling arrangements, or operating contracts);
- Value for grid stability and reliability (such as a plant that contributes a large percentage of a zone's energy at any given time); and
- Operational history (assets with weaker track records might be assessed lower, while those that have run less frequently than designed could be assessed higher).

Regulated utility fixed assets

We use the utility's invested capital as the basis for our gross EV for the regulated business. Where regulators have a mandate to set rates sufficient to recover prudently incurred costs, including the opportunity to earn a return of and on its invested capital, we expect the postbankruptcy value of a reorganized utility's regulated fixed assets to remain largely intact. We think value is likely to be preserved because utility defaults are not tied to a failure of their business model, and the bankruptcy would be likely resolved through a reorganization that would preserve the long-term value of the regulated fixed assets. In most cases, the base is net property plant and equipment (typically without applying a depreciation or realization factor). If the utility is regulated on a different basis than original cost (e.g., fair value or replacement cost), we may use a different figure. We may reduce the value if full recoverability through rates is problematic and therefore the value is likely to be impaired. For instance, if construction cost overruns at a power plant could

result in a disallowance, we would conservatively use the original cost estimate of the plant in our calculation. If an entity has other businesses that are unregulated, the value of these assets or operations will be calculated separately using the most relevant approach. For example, if a regulated utility also has some merchant power plants, these may be valued using the DAV guidelines for independent power producers, or a retail distribution business may be valued using a distressed EBITDA multiple approach.

Investment holding companies

We expect to use the DAV approach for the vast majority of investment holding companies (IHCs). For recovery analysis, we generally assume an IHC will default when the value of its investment portfolio is less than its total debt (when its net asset value, or NAV, turns negative) (see table 11). Until that happens, an IHC could avoid default by the timely monetization of its assets or successful refinancing. Exceptions to this would include situations where:

- We expect strong financial maintenance covenants may trigger a default before NAV becomes negative, or
- Favorable liquidity keeps an IHC from defaulting even though NAV is negative.

Table 11

Investment Holding Company: Determining Investment Portfolio Values At Default

Current situation	Investment portfolio value at default
Current NAV is positive and its debt DOES NOT HAVE strong financial maintenance covenants	Investment portfolio value = total debt (principal)
Current NAV is positive and its debt HAS strong financial maintenance covenants	Investment portfolio value = value that would trigger a default (i.e. investment portfolio value exceeds total debt, by definition, due to covenant triggers)
Current NAV is negative	Investment portfolio value = typically lower of current or average equity values (e.g. 52-week avg., 200-day moving avg., etc.) as appropriate
NAV--Net asset value.	

1. Additionally, we assume that upon default, the IHC's assets are sold to resolve the default. In such a scenario, we expect the forced sale of the equity interests to meaningfully depress realization rates and that the relative liquidity and diversity of the IHC's equity interests will determine the extent of the discount.

We use the asset liquidity and asset diversity scores in the IHC methodology to determine the relevant realization rates (1 - the discount rate) (see table 12). We may revise the realization rates in table 12 up or down by 5 percentage points based on expected changes to the portfolio on the path to default as assets are monetized.

Table 12

Determining the Realization Rate To Investment Portfolio Value

Diversity score	Liquidity score (%)				
	1	2	3	4	5
1	85	85	80	75	75
2	85	80	80	75	70

Table 12

Determining the Realization Rate To Investment Portfolio Value (cont.)

3	85	80	75	75	70
4	80	80	75	70	70
5	80	75	75	70	65

Note: Liquidity and diversity scores are as determined by the IHC criteria. We may revise the realization rates by +/- 5 percentage points to account for likely changes in the portfolio before default.

Working capital (all sectors)

We generally consider the working-capital depreciation and realization rates outlined in table 13.

Table 13

Working-Capital Depreciation And Realization Rates

Sector	Category	Shrinkage/depreciation	Realization (%)
All	Cash (including restricted cash)	80-100	100
All	Accounts receivable	Consistent with expected contraction on path to default	55 - 85
All	Inventories - raw materials	Consistent with expected contraction on path to default	35 - 85
All	Inventories - work in process	Consistent with expected contraction on path to default	0 - 55
All	Inventories - finished goods	Consistent with expected contraction on path to default	45 - 65

Shrinkage for working-capital assets depends on the default scenario that is assumed for the hypothetical default. If default is specified as a decline in demand for a company's products, finished goods inventory levels may not decline (shrink) significantly, but the realization rate we assume would reflect the lack of demand and thus be deeply depressed (at the lower end of the range).

Similarly, if the hypothetical default scenario assumes the loss of one or more major customers, the shrinkage in receivables may be significant even though the remaining customers continue to pay as agreed, with the realization rate at the higher end of the range.

Although we generally assume cash shrinks by 100% in a liquidation scenario, for those sectors where we assume reorganization but value the company using a DAV approach, we may assume modest cash at emergence.

Fixed assets (all sectors)

Shrinkage for fixed assets should reflect the expected remaining life of the asset and condition; the valuation basis is the higher of net book value or appraised fair market value. Liquidation scenarios would use the lower part of the realization ranges.

Table 14

Fixed Assets: Depreciation And Realization Rates

Sector	Category	Shrinkage / Depreciation	Realization
All	Buildings	2%-5% per year	40%-60%
All	Land	0%	70% of NBV / 85% of FMV
All	Furniture & fixtures	10% per year	0%-10%
All	Machinery & equipment	4%-10% per year	35%-55%
All	Rental equipment	5%-10% per year	50%-85%

NBV--Net book values. FMV--Fair market value.

Financial services

For financial institutions, we use the EBITDA multiple valuation approach, the DAV approach, or a combination of the two. Financial institutions are sometimes financial asset-intensive companies and are sometimes companies whose liquidation valuations are likely to be based upon future earnings. In addition, financial institutions frequently have financial assets on their balance sheets that have observable values that should be realizable in a liquidation scenario, plus financial services operations that are cash generative for which the valuations are likely to be based on future earnings. When using the combination approach, we typically apply the DAV approach to the assets that we believe have a realizable, observable value while applying the EBITDA multiple approach for the remaining operations, as appropriate. In addition to the typical discount or haircut ranges by sector for corporates, we apply assumptions specific to financial institutions we view as financial corporates.

Financial services finance companies

We make sector- and asset-specific assumptions for FSFCs. After reducing the value of the assets to reflect a value possible at the time of default, the assets are further haircut to reflect liquidation. We determine asset value haircuts based upon asset-specific information. For example, we typically haircut distressed assets (typically a portfolio of distressed loans or receivables) by 25% because much of the par value is already accounted for in the distressed asset values. We may make moderate adjustments to the haircut to account for differences in company-specific disclosures. For example, we may lower the standard 25% haircut if a company reported the assets at amortized cost rather than using a fair-value approach. We may also adjust the haircut for some distressed assets, such as small or midsize enterprise loans, which may be less liquid and as such have a less reliable mark-to-market relative to consumer credit, for example, and warrant a higher haircut.

Investments/Marketable Securities

We generally value marketable securities using a discount to the market value as appropriate.

Sector-Specific Approach: Real Estate Companies

For U.S. real estate companies (including REITs), we generally use an income capitalization valuation approach for stabilized income-generating properties, using our current commercial mortgaged-backed securities capitalization table (see "Application Of CMBS Global Property Evaluation In U.S. And Canadian Transactions," published on Sept. 5, 2012). This table has been reproduced below as table 15 and details capitalization rates based on the type of property as well as factors such as the property quality and/or geography. (For non-U.S. companies, we generally use a discount-to-book-value approach.) As part of our recovery analysis, we generally assess up to a 15% discount on the respective capitalization rates to reflect distress in the currently stabilized properties depending on the location, the company's vulnerability to rising vacancies, and ability to refill vacant space or repurpose the property. For nonstabilized nonincome generating properties, we use the discount-to-book-value approach. To the extent a particular property type is not listed in table 15, we will consider available market data on capitalization rates for the subject property type and/or consider the most comparable property type and its characteristics. We will also take into consideration appraisals as part of our recovery analysis.

Table 15

S&P Global Ratings' CMBS Cap Rates Plus Distress For Recovery Analysis

As of 9/5/2012 (Application of CMBS Global Property Evaluation Methodology in U.S. and Canadian Transactions)

		S&P CMBS Cap Rate			Distress: 5%			Distress: 10%			Distress: 15%		
		Market type											
Property type	Property subtype	Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
Office (*)													
	Class A - NYC CBD	6.25	N/A	N/A	6.56	N/A	N/A	6.88	N/A	N/A	7.19	N/A	N/A
	Class A - DC CBD	6.75	N/A	N/A	7.09	N/A	N/A	7.43	N/A	N/A	7.76	N/A	N/A
	Class A - other CBD (including Toronto)	7.00	7.50	8.00	7.35	7.88	8.40	7.70	8.25	8.80	8.05	8.63	9.20
	Class B - NYC CBD	7.00	N/A	N/A	7.35	N/A	N/A	7.70	N/A	N/A	8.05	N/A	N/A
	Class B - DC CBD	7.25	N/A	N/A	7.61	N/A	N/A	7.98	N/A	N/A	8.34	N/A	N/A
	Class B - other CBD (including Toronto)	7.50	8.00	8.50	7.88	8.40	8.93	8.25	8.80	9.35	8.63	9.20	9.78
	Class A suburban - NYC and DC	7.00	N/A	N/A	7.35	N/A	N/A	7.70	N/A	N/A	8.05	N/A	N/A
	Class A suburban (including Toronto)	7.25	7.75	8.25	7.61	8.14	8.66	7.98	8.53	9.08	8.34	8.91	9.49
	Class B suburban - NYC and DC	7.50	N/A	N/A	7.88	N/A	N/A	8.25	N/A	N/A	8.63	N/A	N/A
	Class B suburban (including Toronto)	7.75	8.25	8.75	8.14	8.66	9.19	8.53	9.08	9.63	8.91	9.49	10.06
	Medical office	8.00	8.50	9.00	8.40	8.93	9.45	8.80	9.35	9.90	9.20	9.78	10.35
	Surgical medical	9.00	9.50	10.00	9.45	9.98	10.50	9.90	10.45	11.00	10.35	10.93	11.50
Retail													
	Anchored, avg. to above avg. quality	7.00	7.25	7.75	7.35	7.61	8.14	7.70	7.98	8.53	8.05	8.34	8.91

Table 15

S&P Global Ratings' CMBS Cap Rates Plus Distress For Recovery Analysis (cont.)

As of 9/5/2012 (Application of CMBS Global Property Evaluation Methodology in U.S. and Canadian Transactions)

Property type		S&P CMBS Cap Rate			Distress: 5%			Distress: 10%			Distress: 15%		
		Market type											
		Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
	Anchored, below-avg. quality	7.25	7.75	8.25	7.61	8.14	8.66	7.98	8.53	9.08	8.34	8.91	9.49
	Unanchored, avg. to above avg. quality	7.50	8.00	8.50	7.88	8.40	8.93	8.25	8.80	9.35	8.63	9.20	9.78
	Unanchored, below-avg. quality	8.00	8.25	8.75	8.40	8.66	9.19	8.80	9.08	9.63	9.20	9.49	10.06
	Grocery-anchored center	6.75	7.00	7.50	7.09	7.35	7.88	7.43	7.70	8.25	7.76	8.05	8.63
	Mall - sales > \$750 psf	N/A	6.00	N/A	N/A	6.30	N/A	N/A	6.60	N/A	N/A	6.90	N/A
	Mall - sales > \$600 psf	N/A	6.25	N/A	N/A	6.56	N/A	N/A	6.88	N/A	N/A	7.19	N/A
	Mall - sales > \$500 psf	N/A	6.50	N/A	N/A	6.83	N/A	N/A	7.15	N/A	N/A	7.48	N/A
	Mall - sales > \$400 psf	N/A	6.75	N/A	N/A	7.09	N/A	N/A	7.43	N/A	N/A	7.76	N/A
	Mall - sales > \$350 psf	N/A	7.25	N/A	N/A	7.61	N/A	N/A	7.98	N/A	N/A	8.34	N/A
	Mall - sales > \$300 psf	N/A	7.50	N/A	N/A	7.88	N/A	N/A	8.25	N/A	N/A	8.63	N/A
	Mall - sales > \$250 psf	N/A	7.75	N/A	N/A	8.14	N/A	N/A	8.53	N/A	N/A	8.91	N/A
	Mall - sales < \$250 psf	N/A	8.00	N/A	N/A	8.40	N/A	N/A	8.80	N/A	N/A	9.20	N/A
	Mall - No historical sales data	N/A	8.25	N/A	N/A	8.66	N/A	N/A	9.08	N/A	N/A	9.49	N/A
	Unenclosed outlet center	Add up to 1.50% to mall cap rate											
	Enclosed outlet mall	Add up to 0.50% to mall cap rate											
	Major urban retail corridor	Add up to 0.25% to mall cap rate											
	Free standing movie theater - sales > \$1MM/screen	8.00	8.25	8.75	8.40	8.66	9.19	8.80	9.08	9.63	9.20	9.49	10.06
	Free standing movie theater - sales > \$350k and < or equal to \$1 MM/screen	8.25	8.50	9.00	8.66	8.93	9.45	9.08	9.35	9.90	9.49	9.78	10.35
	Free standing movie theater - sales < \$350k/screen	8.50	9.00	9.50	8.93	9.45	9.98	9.35	9.90	10.45	9.78	10.35	10.93
	Free standing fitness center	8.25	8.75	9.25	8.66	9.19	9.71	9.08	9.63	10.18	9.49	10.06	10.64

Table 15

S&P Global Ratings' CMBS Cap Rates Plus Distress For Recovery Analysis (cont.)

As of 9/5/2012 (Application of CMBS Global Property Evaluation Methodology in U.S. and Canadian Transactions)

Property type		S&P CMBS Cap Rate			Distress: 5%			Distress: 10%			Distress: 15%		
		Market type											
		Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
	Free standing restaurant/food service	7.75	8.25	8.50	8.14	8.66	8.93	8.53	9.08	9.35	8.91	9.49	9.78
	Free standing pharmacy	7.25	7.75	8.25	7.61	8.14	8.66	7.98	8.53	9.08	8.34	8.91	9.49
Multifamily													
	Class A	6.25	6.75	7.00	6.56	7.09	7.35	6.88	7.43	7.70	7.19	7.76	8.05
	Class B	6.75	7.00	7.50	7.09	7.35	7.88	7.43	7.70	8.25	7.76	8.05	8.63
	Class C	7.00	7.50	8.00	7.35	7.88	8.40	7.70	8.25	8.80	8.05	8.63	9.20
	Student housing	Add up to 0.50% to comparable class and market											
	Manufactured housing	7.00	7.50	8.00	7.35	7.88	8.40	7.70	8.25	8.80	8.05	8.63	9.20
	Recreational vehicle/seasonal/transient	9.25	9.50	9.75	9.71	9.98	10.24	10.18	10.45	10.73	10.64	10.93	11.21
Industrial													
	Industrial/warehouse, above-avg. quality	7.25	7.50	7.75	7.61	7.88	8.14	7.98	8.25	8.53	8.34	8.63	8.91
	Industrial/warehouse, avg. quality	7.50	7.75	8.00	7.88	8.14	8.40	8.25	8.53	8.80	8.63	8.91	9.20
	Industrial/warehouse, below-avg. quality	8.25	8.50	8.75	8.66	8.93	9.19	9.08	9.35	9.63	9.49	9.78	10.06
	Flex-R&D	Add up to 0.50% to comparable quality and market											
Lodging													
	Recognized industry leader (Trophy Property)	N/A	8.25	N/A	N/A	8.66	N/A	N/A	9.08	N/A	N/A	9.49	N/A
	Luxury, high land cost areas	N/A	8.50	N/A	N/A	8.93	N/A	N/A	9.35	N/A	N/A	9.78	N/A
	Luxury, lower land cost areas	N/A	8.75	N/A	N/A	9.19	N/A	N/A	9.63	N/A	N/A	10.06	N/A
	Full service, above average, high land cost areas	N/A	8.75	N/A	N/A	9.19	N/A	N/A	9.63	N/A	N/A	10.06	N/A
	Full service, above average	N/A	9.00	N/A	N/A	9.45	N/A	N/A	9.90	N/A	N/A	10.35	N/A
	Full service, average	N/A	9.25	N/A	N/A	9.71	N/A	N/A	10.18	N/A	N/A	10.64	N/A

Table 15

S&P Global Ratings' CMBS Cap Rates Plus Distress For Recovery Analysis (cont.)

As of 9/5/2012 (Application of CMBS Global Property Evaluation Methodology in U.S. and Canadian Transactions)

Property type		S&P CMBS Cap Rate			Distress: 5%			Distress: 10%			Distress: 15%		
		Market type											
		Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
	Extended-stay, above average, high land cost areas	N/A	9.25	N/A	N/A	9.71	N/A	N/A	10.18	N/A	N/A	10.64	N/A
	Extended-stay, above average	N/A	9.50	N/A	N/A	9.98	N/A	N/A	10.45	N/A	N/A	10.93	N/A
	Extended-stay, average	N/A	9.75	N/A	N/A	10.24	N/A	N/A	10.73	N/A	N/A	11.21	N/A
	Limited service, above average, high land cost areas	N/A	9.25	N/A	N/A	9.71	N/A	N/A	10.18	N/A	N/A	10.64	N/A
	Limited service, above average	N/A	9.50	N/A	N/A	9.98	N/A	N/A	10.45	N/A	N/A	10.93	N/A
	Limited service, average	N/A	10.00	N/A	N/A	10.50	N/A	N/A	11.00	N/A	N/A	11.50	N/A
	Limited service, below average	N/A	10.50	N/A	N/A	11.03	N/A	N/A	11.55	N/A	N/A	12.08	N/A
Self-storage													
	Self-storage	8.00	8.25	8.50	8.40	8.66	8.93	8.80	9.08	9.35	9.20	9.49	9.78
Health care													
	Independent living	8.00	8.25	8.50	8.40	8.66	8.93	8.80	9.08	9.35	9.20	9.49	9.78
	Assisted living	9.00	9.25	9.50	9.45	9.71	9.98	9.90	10.18	10.45	10.35	10.64	10.93
	Skilled nursing	11.00	11.25	11.50	11.55	11.81	12.08	12.10	12.38	12.65	12.65	12.94	13.23
Other													
	Parking garage	8.25	8.50	9.00	8.66	8.93	9.45	9.08	9.35	9.90	9.49	9.78	10.35
	Casino	11.50	12.00	12.50	12.08	12.60	13.13	12.65	13.20	13.75	13.23	13.80	14.38
	Golf course	11.25	11.75	12.25	11.81	12.34	12.86	12.38	12.93	13.48	12.94	13.51	14.09
	Data center	8.50	8.75	9.00	8.93	9.19	9.45	9.35	9.63	9.90	9.78	10.06	10.35

*Class C office properties will have a capitalization rate that is 0.25%-0.50% higher than the relevant class B rate. ¶Health care properties that generate a high percentage of their revenues (typically more than 60.0%) from private-pay patients may have a capitalization rate up to 0.50% lower. CBD--Central business district. PSF--Per square feet.

All regions (except for the U.S.)

In our view, the discount-to-book-value approach continues to be the most appropriate for all regions, except for the U.S., with respect to stabilized properties. It is the best way to capture stabilized and nonstabilized property values for the purpose of estimating recovery prospects for creditors and in the case of European companies that report under IFRS. These standards require property book values stated in financial statements to be fair valued on an annual basis. As such, we base our recovery analysis on the book value as the starting point for assessing debt recoveries for creditors. However, as it is not uncommon for real estate developers across the world to use an

income capitalization approach in valuing properties, including the determination of fair value under IFRS, we may use this approach in some instances when we consider it to be more appropriate, on a case by case basis, in lieu of the discount-to-book-value approach.

In the U.S., property book values reflect the historical cost of the properties. Therefore, it is not fair-valued and does not necessarily reflect current market values unless the properties were recently acquired. As such, it is not the optimal value to use the book values as a base to determining debt recoveries for stabilized properties, except in some cases when the discount-to-book-value approach is the most appropriate for the recovery analysis. For nonstabilized properties such as land, properties under development or construction, and/or properties completed but in the process of leasing out its space, we generally use the discount-to-book value.

Standard realization rates

The standard realization rates assessed in our discount-to-book-value approach depend on certain characteristics of the properties and their operating performance.

Table 16

Real Estate Property Realization Rate Ranges

Property type	High (%)	Medium (%)	Low (%)
Stabilized income-generating properties	70-80	60-70	40 - 60
Non-stabilized non-income-generating properties/land under development/construction	65-80	50-65	35-50
Land held for future development	60-75	45-60	30-45
Accounts receivable	75-100	50-75	25-50

Table 17

Real Estate Property Realization Rate Characteristics

Property type	High	Medium	Low
Stabilized income-generating properties	-- Low concentration of tenants -- High tenant rent coverage -- Strong regional economy -- High asset liquidity with minimal restrictions to complete the sale (for example, a very low or no portion of properties locked by a specific tenant)	-- Moderate concentration of tenants -- Moderate tenant rent coverage -- Moderate asset valuation by the company than that held by third party -- Moderate strength regional economy -- Moderate asset liquidity some restrictions to complete the sale (for example, a moderate portion of properties locked by a specific tenant)	-- High concentration of tenants -- Low tenant rent coverage -- Weak regional economy -- Low asset liquidity with substantial restrictions to complete the sale (for example, the owner cannot sell it in distress unless the tenant releases the property)
Non-stabilized non-income-generating properties/land under development/construction	-- Less amount of time and capital needed to complete improvements and renovations -- Strong likelihood of potential tenant ramp-up based on demography/geography -- Lower level of speculative land acquisition or construction in progress	-- Moderate amount of time and capital needed to complete improvements -- Moderate likelihood of potential tenant ramp-up based on demography/geography -- Moderate level of speculative land acquisition or construction in progress	-- Higher amount of time and capital needed to complete improvements and renovations -- Moderate to low likelihood of potential tenant ramp-up based on demography/geography -- Higher level of speculative land acquisition or construction in progress

Table 17

Real Estate Property Realization Rate Characteristics (cont.)

Property type	High	Medium	Low
Land held for future development	-- Prime location -- Low level of entitlement requirements -- Recently acquired	-- Average location -- Moderate level of entitlement requirements -- Mothballed	-- Poor location -- Lower level of entitlement requirements -- Mothballed
All of the above--jurisdictional impacts and other factors that could affect the valuation	-- Highly leveraged -- Low geographic concentration -- Diverse demographics -- Easy accessibility and convenience to property -- Strong regional economy/low volatility in housing prices	-- Moderately leveraged -- Moderate geographic concentration -- Moderately diverse demographics -- Moderate accessibility and convenience to property -- Moderate regional economy/moderate volatility in housing prices	-- Moderately-lowly leveraged -- Moderate to high geographic concentration -- Homogenous demographics -- Difficult accessibility and convenience to property -- Weak regional economy/high volatility in housing prices

Prepetition Interest Rate Guidelines

We generally use the following prepetition interest rates, which we also use in our interest calculations for exposure at default and the EBITDA proxy calculations.

Benchmark rates

Our prepetition interest rate consists of a benchmark rate plus a margin:

- LIBOR (British pound): 3%
- EURIBOR (euro): 2.5%
- USD LIBOR (U.S. dollar): 2.5%
- CHF LIBOR (Swiss franc): 1%
- SELIC (Brazilian real): 5%
- CETES (Mexican peso): 5%
- RBA (Australian dollar): 3%
- BOI (Israeli shekel): 3%

When evaluating benchmark rates or regions not listed above, we attempt to estimate a benchmark rate based upon long-term median levels and cap the benchmark rates at 5%.

Note: The benchmark rates for certain countries, usually in Group B jurisdictions (such as Brazil), have been capped at 5%. Total interest is also capped at 10% for these countries.

Our margin assumptions for variable-rate debt with financial maintenance covenants are:

- The higher of the top of the pricing grid or 5% on first-lien debt,
- The higher of the top of the pricing grid or 8% on second-lien debt and junior debt, and
- The top of the pricing grid on asset-based loans.

Related Criteria

- Reflecting Subordination Risk In Corporate Issue Ratings, Sept. 21, 2017
- Recovery Rating Criteria For Speculative-Grade Corporate Issuers, Dec. 7, 2016
- Methodology: Jurisdiction Ranking Assessments, Jan. 20, 2016
- Issue Credit Rating Methodology For Nonbank Financial Institutions And Nonbank Financial Services Companies, Dec. 9, 2014
- Methodology For Applying Recovery Ratings To National Scale Issue Ratings, Sept. 22, 2014
- Corporate Methodology, Nov. 19, 2013
- Methodology: Industry Risk, Nov. 19, 2013
- Revised Assumptions For Assigning Recovery Ratings To The Debt Of Oil And Gas Exploration And Production Companies, Sept. 14, 2012
- CMBS Global Property Evaluation Methodology, Sept. 5, 2012
- Principles Of Credit Ratings, Feb. 16, 2011

Related Research

- Application Of CMBS Global Property Evaluation In U.S. And Canadian Transactions, published Sept. 5, 2012

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