Investors should assess debt yield alongside traditional financial covenants to capture CRE risk

Commercial real estate lenders are increasingly focusing on debt yield (DY) along with traditional metrics like Loan-to-Value (LTV) and Debt Service Coverage Ratio (DSCR). DY is a dynamic operating performance metric particularly appropriate for measuring refinancing risk and conducting peer analysis, as it is not subject to manipulation. Scope's innovative rating approach embeds all three metrics as the cornerstone of its credit risk framework: DSCR for term default risk analysis; DY and LTV for refinancing risk analysis.

This note provides an overview of the key commercial real estate performance metrics and why debt yield analysis should complement traditional metrics. We also detail Scope's unique CRE credit risk framework.

1 Commercial real estate performance metrics

a) Overview

Debt yield, LTV and DSCR are complementary metrics, because they measure different aspects of credit risk. DY focuses on levered returns, LTV addresses debt leverage, and DSCR captures debt servicing capacity.

DY is superior to LTV for measuring refinancing risk under certain conditions e.g. rising interest rates, or in a rebasing environment. DY provides a forward-looking break-even measure on a debt refinancing rate. LTV, by contrast, is essentially a lagged measure of over-collateralisation. Meanwhile DSCR remains the primary measure of borrower payment capacity i.e. term default risk.

A benefit of the DY formula is it is sensitive to a transaction's cashflows only, while LTV and DSCR are directly impacted by exogenous macro factors i.e. capitalisation rate or reference rates. Furthermore, the formula is not subject to subjectivity or manipulation, as may be the case for LTV and DSCR. This makes DY particularly suitable for peer analysis.

Figure 1: Commercial real estate metrics and sensitivity factors

	Debt yield	LTV	DSCR
Formula	$DY = \frac{Net\ operating\ income}{Debt\ amount}$	$\text{LTV} = \frac{Debt\ amount}{Appraised\ value}$ $\text{LTV} = \frac{Debt\ amount}{NOI/cap\ rate}$	$\text{DSCR} = \frac{Net\ operating\ income}{Debt\ service}$ $\text{DSCR} = \frac{Net\ operating\ income}{Total\ debt\ cost/tenor}$
Focus	**Levered return assessment**	**Debt leverage assessment**	**Levered debt servicing assessment**
Term default risk measure	⊘ **(indirectly only)**	⊘ **(positive cashflow but negative equity)**	✔
Refinancing default risk measure	✔ **(rising interest rate / rebasing risk environment)**	✔ / ⊘ **(minimum positive equity / unsuitable for debt servicing assessment)**	⊘ **(previous financing conditions)**
Hard to manipulate	✔	⊘ **(subject to appraisal value)**	⊘ **(subject to amortisation schedule)**
Appropriate for peer analysis	✔	⊘ **(different appraised value scenarios / capitalisation rates)**	⊘ **(different cost of debt / amortization schedule)**
Dynamic and non-lagging metric	✔	⊘ **(infrequent asset re-appraisal)**	✔
Directly impacted by endogenous factors	✔	⊘ **(macroeconomic environment, appraisal scenarios)**	⊘ **(reference rate)**

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Related methodology

CRE security and CMBS rating methodology, August 2020

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b) Debt yield (DY)

DY is a debt gearing ratio which measures property cashflows as a percentage of outstanding debt. It can be interpreted as the lender's cash-on-cash return assuming property foreclosure. It has several advantages:

i) A forward-looking measure of refinancing risk. DY provides the dynamic break-even refinancing rate of a leveraged transaction. A transaction with a 6% debt yield will sustain a refinancing coupon up to 6% all else equal.

ii) Hard to manipulate. DY is the least manipulable metric because of its non-direct exposure to macroeconomic factors (capitalisation rate), qualitative assumptions (appraisal) or structuring optimisation (scheduled amortisation)

iii) Peer analysis benefits. DY facilitates comparison between transactions (clean formula and not subject to time lag) and through time (not subject to external factors).

iv) Dynamic. DY is frequently monitored and both components are updated at the same time. It is not, therefore, subject to a time lag like LTV (asset re-appraisal).

v) Operating performance. DY is a pure cashflow metric capturing idiosyncratic risks only.

However, DY has the following limitations:

i) Term default risk. DY does not directly assess current debt-servicing capacity; it is not as intuitive as DSCR to determine debt-servicing risk.

ii) Debt leverage assessment. DY is a cashflow measure so is useful to measure refinancing risk but it is not as intuitive as LTV to assess recoveries given default. Additionally, DY does not give any benefit to forecast deleveraging (scheduled amortisation) because the denominator reflects the current debt amount and not a forward view like the DSCR does (12m forward debt service).

iii) Unsuitable for non-stabilised transactions. DY will be volatile because of its cashflow-intrinsic component calculated over a short-term horizon.

c) Debt service coverage ratio (DSCR)

DSCR is a dynamic measure assessing a property's net operating income taking into account annualised debt service. In its simplified form, the interest coverage ratio (ICR) measures the extent to which a property's net operating income covers interest service.

DSCR facilitates an assessment of:

i) Term default risk. DSCR measures debt-servicing capacity or periodically available levered cashflows as a multiple of debt obligation including interest and principal repayments. It helps lenders determine the breakeven of a borrower's debt service capacity at each interest payment date.

ii) Dynamic metric. DSCR is monitored frequently to reflect a borrower's debt-servicing capacity at each interest payment date. However, its two components reflect a situation at two different points in time: current net operating income (NOI) divided by debt service based on previously agreed conditions.

DSCR is subject to manipulation, however, and under-estimates the following risks in the current macro-economic environment:

i) Refinancing risk. DSCR focuses on the capacity of a property to service its current debt but not its future debt. A bullet loan with a current tight DSCR may fail to refinance if debt becomes more expensive between the day the original debt was underwritten and today.

ii) Debt leverage assessment. DSCR does not measure the indebtedness of a CRE project but rather its debt servicing capacity.

iii) Manipulation risks. Many recently issued CRE loans feature little or no principal amortisation, optically increasing DSCR even if refinancing risk increases.

iv) Unsuitable for peer comparison. DSCRs on the same transactions cannot really be compared at two points in time because costs of debt were different. Similarly, DSCRs are not comparable for two transactions underwritten at the same time if their amortisation schedules are different.

v) Sensitivity to exogenous factors. DSCR can be directly impacted by macroeconomic factors such as reference rates.

vi) Risk of misinterpreting financial health. A low DSCR indicates a high probability of default over the short term but it doesn't mean the borrower is at risk at refinancing (mid-term). A high debt repayment rate would negatively impact a borrower's DSCR even though deleveraging is a positive credit risk signal.

d) Loan-to-value (LTV)

The Loan-to-Value ratio measures indebtedness by dividing outstanding debt by the latest collateral value. Development loans and refurbishment loans rely on a loan-to-cost metric which divide outstanding debt by the total project cost (together "LTV" thereafter for simplification). LTV has the following advantages:

i) Debt leverage assessment. LTV measures a borrower's skin-in-the game (equity) and it determines the asset-value buffer to the financing. Lenders can therefore assess their estimated recovery upon default and enforcement of the secured asset. LTV ensures a minimum alignment of interest between lenders and borrowers.

However, LTV presents the following drawbacks:

i) Unsuitable for assessing term and refinancing default risks. The absence of cashflow consideration in the LTV calculation disregards an assessment of term default risk. It increases term risk when tenants in lockdown stop paying rent like during the Covid-19 outbreak, or refinancing risk when liquidity dries up like in 2008.

ii) Manipulation risks. Many recently issued CRE loans feature LTV based on expected future value e.g. upon completion or rent stabilization, and not on their current market value, artificially decreasing current LTV. Additionally, LTV can be manipulated to be under-estimated, for example by deducting debt-funded capex reserves from the loan amount (numerator) rather than adding it to the property value amount[1].

iii) Unsuitability for peer comparison. LTV can be hardly compared for a same transaction at two points in time because its components – loan amount and collateral value – can be measured at different moments. LTV is not comparable for two distinct transactions underwritten at the same moment because the hypothesis for the collateral valuation can be different.

[1] The LTV of a €200m property can equal to 54.5% or 50% if a €20m debt funded Capex reserve of a €120m loan is considered as a reduction to the numerator or as an addition to the denominator.

iv) Property value time-lag sensitivity and value-anchor bias. Property values are point-in-time and monitored once every year to three years, therefore not considering the latest market risks. Valuers rely partially on local peer-sale comparison resulting into value-anchor bias given the limited data points and their illiquid nature.

v) Sensitivity to exogenous factors. CRE is valued using an investment method which discounts cashflows at a specific capitalisation rate. The property-specific discount rate is an estimation of the return on risk that an investor will expect for such properties. Asset-risk perception varies over time while the in-use capitalisation rate remains the same in CRE valuations. The risk associated with a shopping mall in Berlin is not the same today as it was pre-Covid 19 or in 10 years' time and accordingly its value.

vi) Art-rather-than-science valuation. The unique nature of each real estate asset makes its assessment an art rather than a science even though international professional standards exist. Valuers rely on numerous macro and micro considerations at a point in time to assess the long-term value of an asset. Additionally, valuers are mandated to value properties based on various assumptions like in-place net operating income value or net operating income upon stabilisation. The credit risk of two properties with the same LTV may therefore be very different.

2 Sensitivities of commercial real estate performance metrics

We ran several sensitivity analyses[2] to illustrate the arguments outlined above based on four variables: i) loan coupon rate, ii) property yield, iii) net operating income and iv) debt amortisation rate.

The financial metrics are sensitive to the following variables respectively:

i) Debt yield: net operating income

ii) DSCR: loan coupon rate, amortisation rate, net operating income

iii) LTV: property yield and amortisation rate.

Lenders must consider the three metrics together to better understand the credit risks they face:

- Debt yield to size refinancing risks in a potential rising interest-rate environment or on a rebasing risk environment triggering more expensive debt like in a Covid-19 environment.

- DSCR to determine a borrower's debt-servicing capacity disregarding property valuation if net operating income shrinks like currently in the UK high street retail sector

- LTV to determine the appropriate debt leverage level excluding cashflow considerations like for asset classes suffering during the Covid-19 lockdown period (hospitality, student housing).

Figure 2: Debt yield: sensitivity to net operating income only

Debt Yield		Loan coupon rate (% p.a.)				
		1.5%	2.0%	2.5%	3.0%	3.5%
Yield (%)	3.0%	6.7%	6.7%	6.7%	6.7%	6.7%
	3.5%	6.7%	6.7%	6.7%	6.7%	6.7%
	4.0%	6.7%	6.7%	6.7%	6.7%	6.7%
	4.5%	6.7%	6.7%	6.7%	6.7%	6.7%
	5.0%	6.7%	6.7%	6.7%	6.7%	6.7%

Source: Scope

Debt Yield		Net operating income (EURm p.a.)				
		24.0	22.0	20.0	18.0	16.0
Amortisation rate (% p.a.)	0.5%	8.0%	8.7%	8.7%	8.0%	6.7%
	1.0%	8.0%	8.7%	8.7%	8.0%	6.7%
	1.5%	8.0%	8.7%	8.7%	8.0%	6.7%
	2.0%	8.0%	8.7%	8.7%	8.0%	6.7%
	2.5%	8.0%	8.7%	8.7%	8.0%	6.7%

Source: Scope

Figure 3: DSCR sensitivity to loan coupon rate, amortisation rate and net operating income

DSCR		Loan coupon rate (% p.a.)				
		1.5%	2.0%	2.5%	3.0%	3.5%
Yield (%)	3.0%	2.22x	1.90x	1.67x	1.48x	1.33x
	3.5%	2.22x	1.90x	1.67x	1.48x	1.33x
	4.0%	2.22x	1.90x	1.67x	1.48x	1.33x
	4.5%	2.22x	1.90x	1.67x	1.48x	1.33x
	5.0%	2.22x	1.90x	1.67x	1.48x	1.33x

Source: Scope

DSCR		Net operating income (EURm p.a.)				
		24.0	22.0	20.0	18.0	16.0
Amortisation (% p.a.)	0.5%	2.67x	2.89x	2.89x	2.67x	2.22x
	1.0%	2.29x	2.48x	2.48x	2.29x	1.90x
	1.5%	2.00x	2.17x	2.17x	2.00x	1.67x
	2.0%	1.78x	1.93x	1.93x	1.78x	1.48x
	2.5%	1.60x	1.73x	1.73x	1.60x	1.33x

Source: Scope

[2] We considered a EUR 300m CRE loan financing secured by a EUR 500m collateral generating EUR 20m of NOI per annum. The annual loan coupon and the amortisation rate are respectively 2.50% and 1.50%.

Figure 4: LTV sensitivity to yield and amortisation rate

LTV		Loan coupon rate (% p.a.)				
		1.5%	2.0%	2.5%	3.0%	3.5%
Yield (%)	3.0%	45%	45%	45%	45%	45%
	3.5%	53%	53%	53%	53%	53%
	4.0%	60%	60%	60%	60%	60%
	4.5%	68%	68%	68%	68%	68%
	5.0%	75%	75%	75%	75%	75%

Source: Scope

LTV		Net operating income (EURm p.a.)				
		24.0	22.0	20.0	18.0	16.0
Amortisation (% p.a.)	0.5%	50%	46%	46%	50%	60%
	1.0%	50%	46%	46%	50%	60%
	1.5%	50%	46%	46%	50%	60%
	2.0%	50%	46%	46%	50%	60%
	2.5%	50%	46%	46%	50%	60%

Source: Scope

3 Scope's refinancing risk analytical approach

Scope recently published CRE security and CMBS rating methodology relies on an expected-loss rating approach to assess both term risk and refinancing risk. Our unique CRE credit risk framework combines all the credit risk metrics discussed above. Our term default risk relies on LTV and DSCR metrics while exit debt yield and LTV metrics determine refinancing risk.

We consider a term default as soon as our projected DSCR is lower than one, while the estimated LTV will determine the recovery rate upon default.

At refinancing, we compare the secured CRE portfolio's exit debt yield to Scope's estimated all-in refinancing rate. A CRE security will default if the portfolio's exit debt yield is lower than our all-in refinancing rate. As a safeguard, a CRE security with a loan-to-value equal to or above 100% will also fail to refinance.

Please refer to Appendix 12 of our methodology for a numerical example of our all-in refinancing rate calculation.

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4 Scope's commercial real estate snapshot

Figure 5: CRE rated transactions

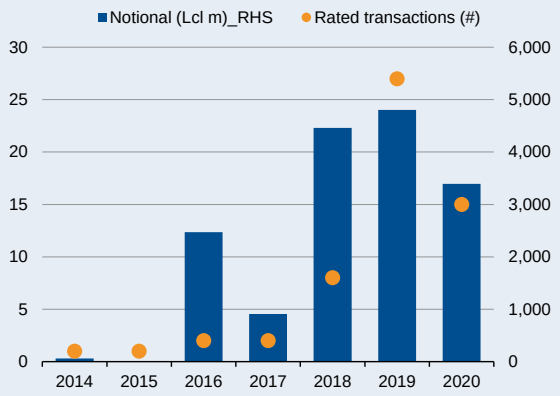

Figure 6: European geographic coverage

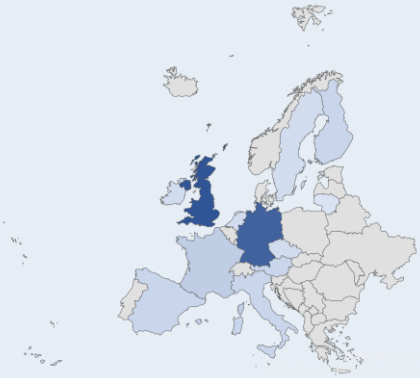

Figure 7: Financing type coverage

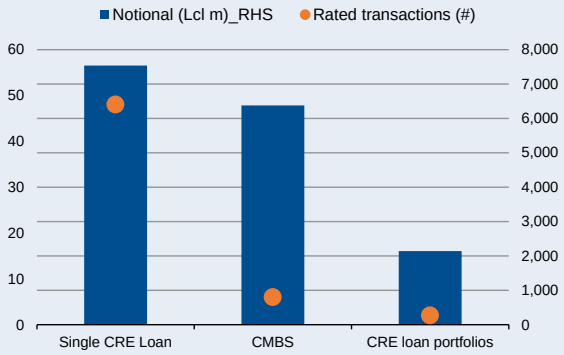

Figure 8: Asset type coverage

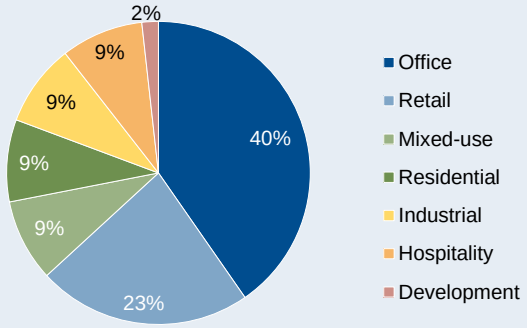

Figure 9: Year-to-date real estate research

Franchise	Asset-type	Topic (link)	Geographic coverage
Structured Finance	Crossed	CRE security and CMBS rating methodology: What makes us different?	Europe
Structured Finance	Residential	Residential real estate: Lisbon's secure rental income initiative unlikely to stop gentrification	Portugal
Structured Finance	Crossed	Covid-19 : What will the European CRE sector look like when the dust settles?	Europe
Structured Finance	Logistics	European logistics CRE: outdated assets won't ride growth momentum	Europe
Structured Finance	Retail	Maroon Loan: autopsy of a default	UK
Structured Finance	Crossed	Leasehold property: attractive investment opportunities with diverse risk drivers	Germany
Structured Finance	Healthcare	Healthcare real estate investment from a rating agency perspective	Europe
Corporates	Retail	Commercial real estate: the retail challenge. Outlook for sub-segment remains negative.	Europe
Corporates	Retail	Europe commercial real estate: retail-exposed firms can weather Covid-19 crisis in the short term	Europe
Corporates	Crossed	2020 Real Estate Outlook	Europe

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