

CREDIT OPINION

19 January 2024

Update



Send Your Feedback

RATINGS

CapitaLand Ascendas REIT

Domicile	Singapore
Long Term Rating	A3
Type	LT Issuer Rating - Fgn Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Yu Sheng Tay +65.6311.2690
 Analyst
 yusheng.tay@moodys.com

Sean Teow +65.6311.2632
 Sr Ratings Associate
 sean.teow@moodys.com

Vikash Halan +65.6398.8337
 Associate Managing Director
 vikas.halan@moodys.com

CapitaLand Ascendas REIT

Update following rating affirmation, outlook remains stable

Summary

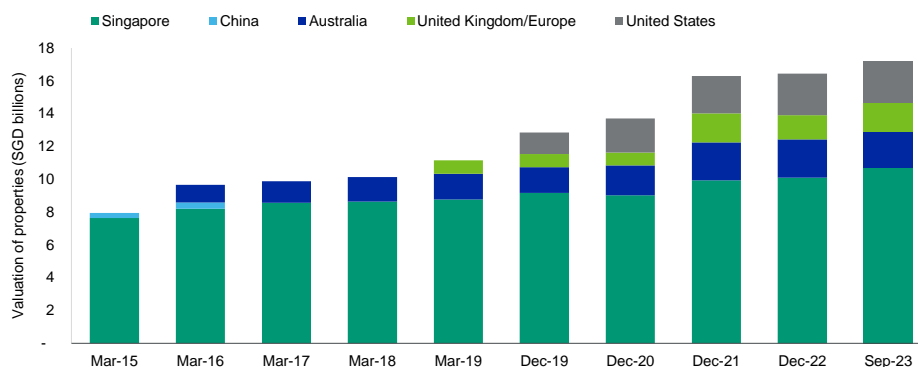
[CapitaLand Ascendas REIT's](#) (CLAR) A3 rating reflects its stable operating track record and income generation from its diversified portfolio of good-quality properties across Singapore, Australia, Europe, the UK and the US.

The trust has an established market position as one of the largest owners of business spaces and industrial assets in Singapore, allowing it to capture long-term growth trends in the technology, logistics and life sciences industries. At the same time, CLAR has a track record of maintaining prudent financial policies, having grown its property portfolio over the years through a balanced mix of debt, equity and asset recycling.

CLAR's rating is also constrained by its use of short-term revolving credit facilities, although liquidity risk is balanced by its established banking relationships, track record of raising funds from capital markets and proactive capital management.

Exhibit 1

CLAR's properties are located across Singapore, Australia, Europe and the US



Source: Company

Credit strengths

- » Established market position in Singapore and geographic diversification
- » Stable operating track record and income generation from a diversified portfolio of good-quality properties
- » Refinancing risk mitigated by its track record of access to funding and established banking relationships

Credit challenges

- » Limited capacity under the trust's credit metrics
- » Inadequate liquidity for the next 12-18 months because of the use of short-term revolving credit facilities and debt maturities

Rating outlook

The stable outlook reflects our view that CLAR will continue to demonstrate steady earnings growth. At the same time, we expect the trust to remain financially prudent in the execution of its growth strategy.

Factors that could lead to an upgrade

CLAR's rating could be upgraded if it continues to improve its geographic diversification while strengthening its credit metrics, such that its Moody's-adjusted debt/total deposited assets remains below 35% and Moody's-adjusted net debt/EBITDA strengthens to below 6.0x on a sustained basis.

Factors that could lead to a downgrade

CLAR's rating could be downgraded if its operating environment deteriorates, leading to higher vacancy levels and a decline in operating cash flow or a fall in asset valuations; or if its credit metrics weaken, such that its Moody's-adjusted net debt/EBITDA rises above 8.0x-8.5x or Moody's-adjusted EBITDA/interest coverage falls below 3.5x.

In addition, a significant change in CLAR's business risk profile resulting from expansion into higher-risk jurisdictions could strain its rating.

Key indicators

Exhibit 2

CapitaLand Ascendas REIT

SGD millions	FYE Dec-20	FYE Dec-21	FYE Dec-22	LTM Jun-23	FYE Dec-23 (F)	FYE Dec-24 (F)	FYE Dec-25 (F)
Total deposited assets	14,968	17,548	17,682	18,223	18,793	19,084	19,290
EBITDA	725	836	862	901	913	948	959
Debt / total deposited assets	36%	39%	40%	40%	40%	40%	40%
Net debt / EBITDA	7.1x	7.7x	7.9x	7.8x	8.0x	7.9x	7.9x
EBITDA / interest expense	4.3x	5.1x	4.6x	4.0x	3.8x	3.6x	3.5x
Secured debt / total deposited assets	4%	3%	3%	3%	3%	3%	3%

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. Moody's forecasts (F) are our opinion and do not represent the views of the issuer.

[2] FYE = Financial year-end; LTM = Last 12 months.

[3] Debt metrics incorporate (i) a 50% equity treatment assigned to the trust's perpetual securities and (ii) a pro rata share of debt at 1 Science Park Drive from 2022 onwards.

Sources: Moody's Financial Metrics™ and Moody's Investors Service estimates

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody.com> for the most updated credit rating action information and rating history.

Profile

CapitaLand Ascendas REIT (CLAR) was listed on the Singapore Stock Exchange in November 2002. As of 30 September 2023, the trust had a diversified portfolio of 97 properties in Singapore, 36 in Australia, 50 in Europe and 48 in the US, with a total appraised value of SGD17.2 billion. The trust was formerly known as Ascendas Real Estate Investment Trust and was renamed CLAR in 2022.

The trust's sponsor, CapitaLand Investment Limited (CLI), is a 53%-owned subsidiary of [Temasek Holdings \(Private\) Limited](#) (Aaa stable), which, in turn, is wholly owned by the [Government of Singapore](#) (Aaa stable). As of August 2023, CLI held a 17% stake in CLAR. CLAR is managed by CapitaLand Ascendas REIT Management Limited, while the properties in Singapore are managed by Ascendas Services Pte Ltd, both of which are wholly owned subsidiaries of CLI.

Detailed credit considerations

Credit quality can withstand difficult macroeconomic conditions

Amid [challenging global macroeconomic conditions](#) on the back of slower growth and higher-for-longer interest rates, we expect CLAR to record continued growth in earnings.

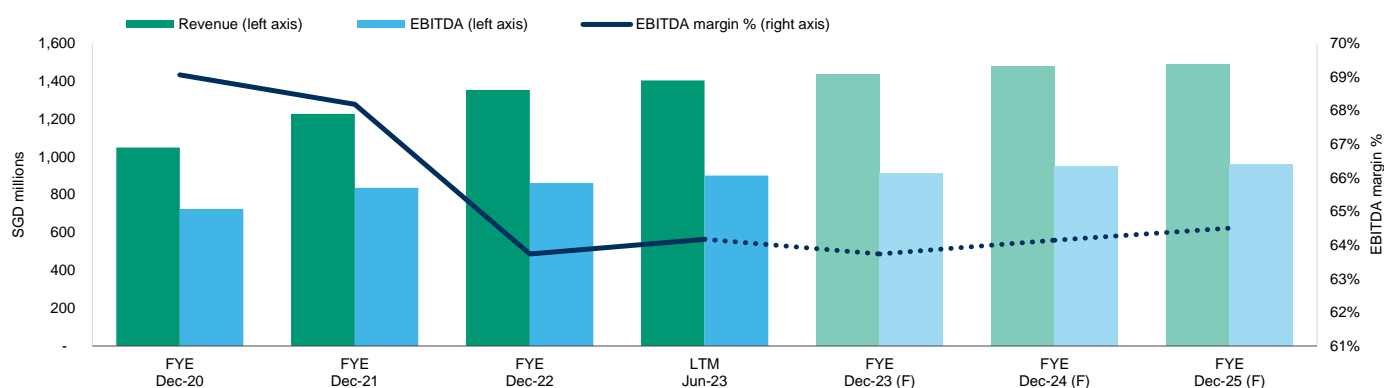
EBITDA is projected to rise to SGD950 million-SGD960 million over the next two years from SGD901 million over the 12 months that ended 30 June 2023. We expect operating performances to stay resilient because of the strong asset quality of CLAR's property portfolio and its market position. At the same time, asset acquisitions completed in 2023 will also contribute to full-year earnings.

Although rental reversions are likely to moderate as customer sentiment softens, we expect reversions to remain positive because of the tight supply conditions in the market, particularly for logistics and industrial properties. As of 30 September 2023, CLAR's portfolio occupancy rates remained high at around 95% and the trust recorded double-digit rental reversions in the first nine months of the year.

In addition, we expect CLAR's EBITDA margins to remain broadly stable as elevated utilities costs moderate following new tariff rates contracted in the second half of 2023.

Exhibit 3

Earnings will continue to rise despite difficult macroeconomic conditions

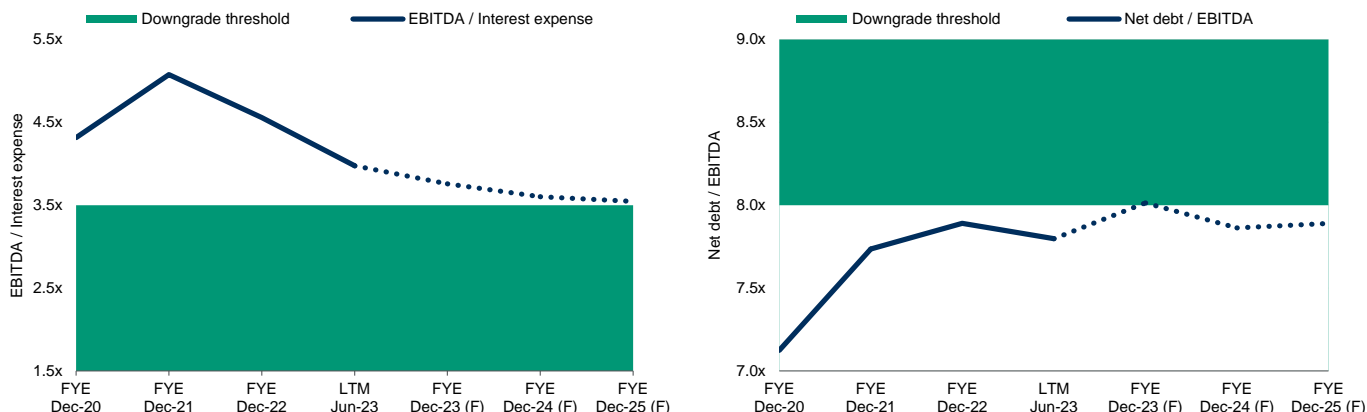


Sources: Moody's Financial Metrics™ and Moody's Investors Service estimates

We expect CLAR's credit metrics to remain within their respective rating thresholds over the next two years, although with limited capacity. Interest coverage ratio will weaken toward 3.5x over the next two years from 4.0x in the 12 months that ended 30 June 2023 as the trust refinances its maturing debt at prevailing borrowing costs. Meanwhile, leverage, measured as net debt/EBITDA, will remain around 8.0x over the same period.

Exhibit 4

CLAR has limited capacity under its interest coverage and leverage ratios



Sources: Moody's Financial Metrics™ and Moody's Investors Service estimates

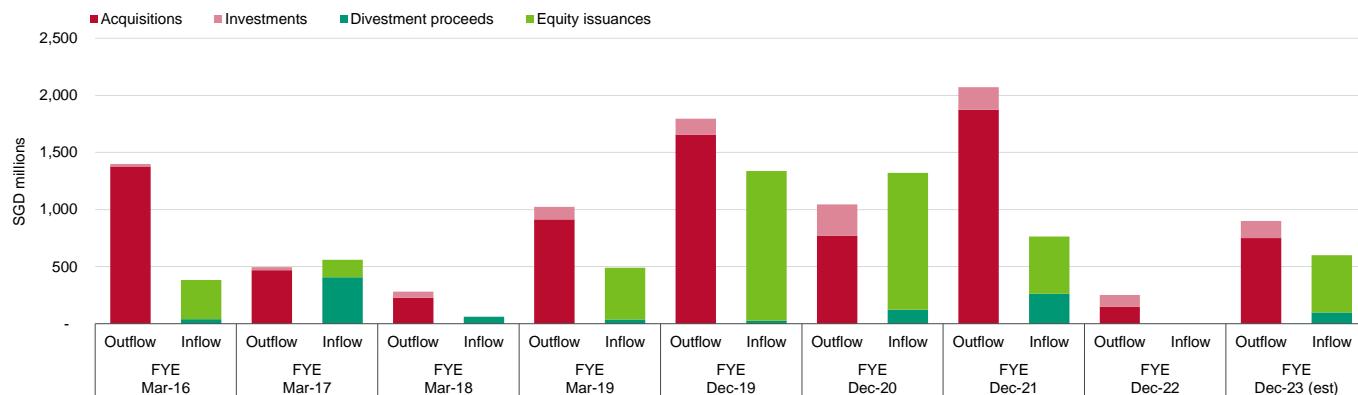
Acquisitive growth strategy balanced with prudent financial policies

CLAR's appetite for growth has increased since 2015, when it expanded its investment mandate to explore opportunities beyond Singapore. Nonetheless, we expect the trust to remain financially prudent while growing its portfolio. CLAR has a track record of funding its investments with a mix of divestments, debt and equity (see Exhibit 5).

In 2023, CLAR completed around SGD724 million of acquisitions, which were partly funded by an equity placement of SGD500 million and divestments of around SGD100 million. These were transacted at net property income yields (after transaction costs) of 6.8%-9.4%, above the annualized yield of 6% for CLAR's portfolio in H1 2023.

Exhibit 5

CLAR has partly funded its growth with divestments and equity issuances



CLAR changed its financial year-end to December from March in 2019.
Source: Company

CLAR's diversification into Australia, Europe and the US has improved its portfolio quality because the assets in these markets have freehold land titles, while industrial land in Singapore is typically leasehold for a period of 30-60 years. Furthermore, these overseas markets tend to have triple net leases and rent escalation features, whereas leases in Singapore typically have three-year tenures with no rental escalations. CLAR will continue to focus on developed markets because of their stable economic fundamentals.

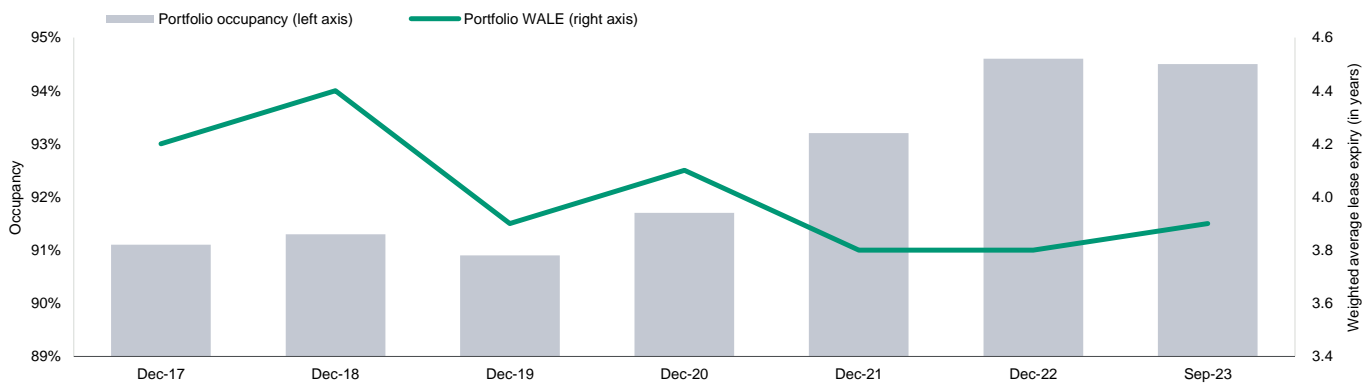
In addition, CLAR has ongoing organic growth plans. The trust is redeveloping three of its existing properties in Singapore at an estimated cost of SGD544 million, which will improve the properties' earnings yield once completed in 2025-26.

Stable operating track record backed by a good-quality portfolio of geographically diversified industrial assets

CLAR has been able to generate stable income through economic cycles, supported by its diversified asset portfolio. In addition to geographic diversification, the trust's portfolio of good-quality industrial assets is spread across three property subsegments — business space and life sciences, logistics, and industrial and data centers — which are exposed to different market dynamics and have different occupancy and rental trends. The positioning of the portfolio also allows CLAR to capture growth in the technology, logistics and life sciences industries.

CLAR's tenant base is diversified. Its largest tenant, [Singapore Telecommunications Limited](#) (A1 stable), accounted for 3.1% of its monthly gross revenue; and its top 10 tenants contributed 16.5% of its monthly gross revenue as of 30 September 2023. CLAR recorded a portfolio occupancy rate of 94.5% and portfolio weighted average lease expiry (WALE) of 3.9 years. The trust has consistently recorded occupancy rates in excess of 90%, and WALE of three to four years (see Exhibit 6).

Exhibit 6
CLAR has consistently recorded occupancy rates in excess of 90%, and WALE of three to four years

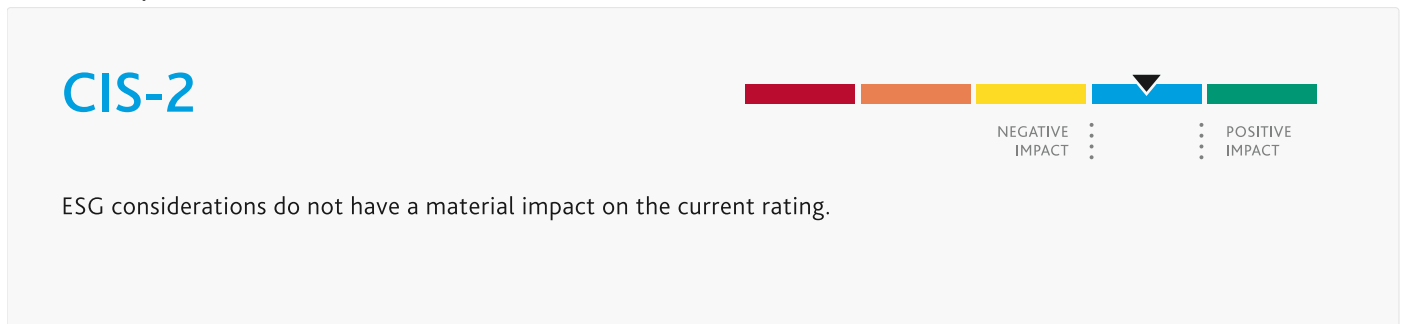


WALE refers to weighted average lease expiry.
 Source: Company

ESG considerations

CapitaLand Ascendas REIT's ESG credit impact score is CIS-2

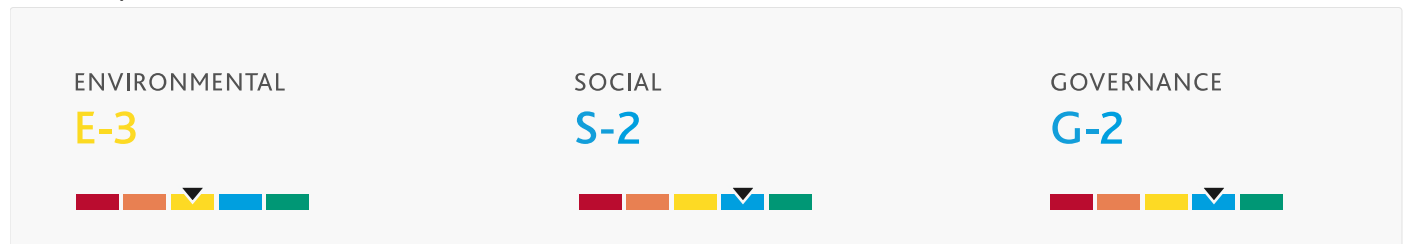
Exhibit 7
ESG credit impact score



Source: Moody's Investors Service

CLAR's **CIS-2** indicates that ESG considerations are not material to the rating. The trust's prudent financial policies and management track record will help to manage its exposure to environmental risks.

Exhibit 8

ESG issuer profile scores

Source: Moody's Investors Service

Environmental

CLAR is exposed to carbon transition risk because evolving regulations and growing stakeholder expectations could entail increased investments to reduce carbon emissions and improve energy efficiency. CLAR is also exposed to physical climate risks because it has a significant proportion of assets in Singapore, which as a low-lying island nation is vulnerable over the long run to rising sea levels.

Social

CLAR's exposure to social risks is mitigated by its portfolio of industrial assets which enables the trust to capture favorable trends in the technology, e-commerce, logistics and life sciences sectors.

Governance

CLAR has prudent financial policies and a strong management track record, having established the trust as a leading industrial REIT in Singapore. While there are related-party transactions between CLAR and its sponsor, this risk is mitigated by regulatory oversight provided by the Monetary Authority of Singapore and exercised through the board, which consists mostly of independent directors.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moody's.com. In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Liquidity analysis

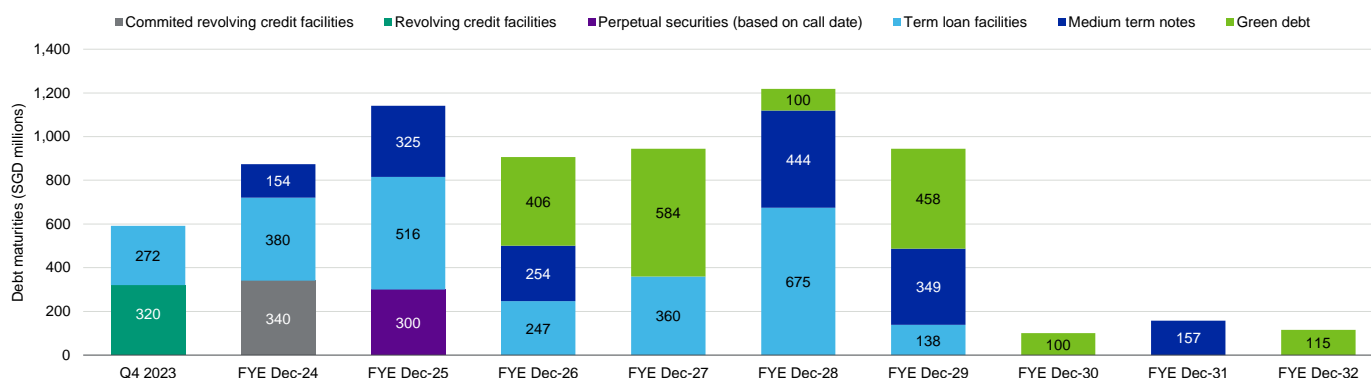
CLAR's liquidity is inadequate because of the trust's reliance on revolving credit facilities. As of 30 September 2023, the trust's cash sources — namely its cash balance and committed undrawn facilities — are insufficient to cover SGD660 million of revolving credit facilities and SGD806 million of medium-term notes and term loans maturing through December 2024.

Nonetheless, we expect refinancing risk to be mitigated by the trust's track record of access to funding and established banking relationships. In December 2023, CLAR obtained a \$200 million revolving credit facility maturing in 2030.

Exhibit 9

CLAR has a well-balanced debt maturity profile

As of 30 September 2023



Source: Company

CLAR's use of revolving credit facilities is credit negative because these facilities are mostly short term and result in a mismatch with the trust's long-dated assets. Although the revolving credit facilities are largely uncommitted, the trust successfully rolled over or refinanced these facilities with long-term loans as they came due over the past decade. CLAR prudently manages its debt maturities and ensures that no more than 20% of debt is due in each year.

Furthermore, CLAR has a track record of accessing funds from the debt and equity markets. We expect the trust's relationship with a reputable sponsor, CLI, to support its ability to access capital.

As of 30 September 2023, CLAR had a weighted average debt maturity of 3.3 years at a weighted average all-in debt cost of 3.3%. The trust has also achieved a high level of natural hedge for its overseas assets. Around 69% of its Australian asset portfolio is funded by borrowings in Australian dollars, while 100% of its asset portfolios in Europe, 79% in the UK and around 74% in the US are funded by borrowings in euros, British pounds and US dollars, respectively.

Structural considerations

The rating for CLAR's SGD300 million perpetual securities is notched down to Baa2 from the A3 issuer rating to reflect the legal subordination inherent in perpetual securities, according to our standard approach for assigning a rating to such hybrid securities.

We have assigned a 50% equity rating to the perpetual issuance, such that half of the security is treated as debt when assessing the overall credit quality of CLAR. Similarly, the perpetual distributions are equally split between interest expense and distributions. We expect subordination to remain around the same level over the next 12-18 months.

Methodology and scorecard

When mapped to our [REITs and Other Commercial Real Estate Firms](#) rating methodology, published in September 2022, the scorecard-indicated outcome for CLAR is Baa1 based on its financials for the 12 months that ended 30 June 2023 and our forward view for 2024 and 2025 (see Exhibit 10). The A3 rating reflects the trust's track record of stable operating performance, strong access to funding and prudent approach toward growth.

Exhibit 10

Rating factors

CapitaLand Ascendas REIT

REITs and other commercial real estate firms industry grid [1][2][3]	LTM Jun-23		Moody's Forward View 2024 (F) & 2025 (F) [4]	
	Measure	Score	Measure	Score
Factor 1 : Scale (5%)				
a) Gross assets (\$ billions)	\$13.6	A	\$14.2 - \$14.3	A
Factor 2 : Business profile (25%)				
a) Market positioning and asset quality	A	A	A	A
b) Operating environment	Baa	Baa	Baa	Baa
Factor 3 : Liquidity and access to capital (25%)				
a) Liquidity and access to capital	Baa	Baa	Baa	Baa
b) Unencumbered assets / gross assets	93%	A	93%	A
Factor 4 : Leverage and coverage (45%)				
a) Total debt + preferred stock / gross assets	40%	Baa	41%	Baa
b) Net debt / EBITDA	7.8x	Ba	7.9x	Ba
c) Secured debt / gross assets	3%	Aa	3%	Aa
d) Fixed-charge coverage	3.9x	Baa	3.5x	Baa
Rating:				
a) Scorecard indicated outcome		Baa1		Baa1
b) Actual rating assigned				A3

[1] All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] Debt includes a portion of hybrid securities considered to have debt-like features, as explained in [Hybrid Equity Credit](#), dated 10 September 2018.

[3] Debt metrics in LTM Jun-23 and the forecasts include the pro rata share of debt at 1 Science Park Drive.

[4] This represents Moody's forward view, not the view of the issuer.

Sources: *Moody's Financial Metrics™* and *Moody's Investors Service estimates*

Ratings

Exhibit 11

Category	Moody's Rating
CAPITALAND ASCENDAS REIT	
Outlook	Stable
Issuer Rating	A3
Senior Unsecured	A3
Preference Stock -Dom Curr	Baa2

Source: *Moody's Investors Service*

Appendix

Exhibit 12

Peer comparison

CapitaLand Ascendas REIT

(in US millions)	CapitaLand Ascendas REIT			Mapletree Pan Asia Commercial Trust			CapitaLand Integrated Commercial Trust		
	A3 Stable			Baa1 Negative			A3 Stable		
	FYE Dec-21	FYE Dec-22	LTM Jun-23	FYE Mar-21	FYE Mar-22	FYE Mar-23	FYE Dec-21	FYE Dec-22	LTM Jun-23
Real estate gross assets	\$13,152	\$13,328	\$13,598	\$6,662	\$6,639	\$12,616	\$17,249	\$18,786	\$18,657
Debt / Gross assets	39%	39%	39%	34%	34%	43%	37%	40%	40%
Net debt / EBITDA	7.7x	7.9x	7.8x	8.4x	8.5x	12.0x	9.0x	10.2x	9.4x
Secured debt / Gross assets	3%	3%	3%	0%	0%	6%	4%	6%	6%
EBITDA / Interest expense	5.1x	4.6x	4.0x	4.4x	4.7x	3.5x	5.1x	4.2x	3.7x

All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end.

Source: Moody's Financial Metrics™

Exhibit 13

Moody's-adjusted debt breakdown

CapitaLand Ascendas REIT

(in SGD millions)	FYE Dec-20	FYE Dec-21	FYE Dec-22	LTM Jun-23
As Reported Debt	5,292	6,689	6,789	7,010
Hybrid Securities	149	149	149	149
Moody's-Adjusted Debt	5,441	6,838	6,939	7,160

All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end. Excludes proportionate share of joint venture debt.

Source: Moody's Financial Metrics™

Exhibit 14

Moody's-adjusted EBITDA breakdown

CapitaLand Ascendas REIT

(in SGD millions)	FYE Dec-20	FYE Dec-21	FYE Dec-22	LTM Jun-23
As Reported EBITDA	659	1,208	1,034	1,028
Unusual	66	-372	-172	-127
Moody's-Adjusted EBITDA	725	836	862	901

All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end.

Source: Moody's Financial Metrics™

© 2024 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Clasificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.