MOODY'S INVESTORS SERVICE

CREDIT OPINION
29 June 2023

Update

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RATINGS

Caterpillar Inc.

Domicile	Irving, Texas, United States
Long Term Rating	A2
Type	LT Issuer Rating
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.

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Caterpillar Inc.

Update to credit analysis

Summary

CAT's products are essential in core sectors of the global economy. The long-term demand fundamentals for CAT's equipment and services remain sound, despite periodic cyclical downturns. These fundamentals include opportunities offered by the energy transition, such as accelerating demand for minerals used in clean energy technologies. Additionally, the company benefits from a formidable independent dealer network, and the retail and wholesale financing provided by CAT Financial.

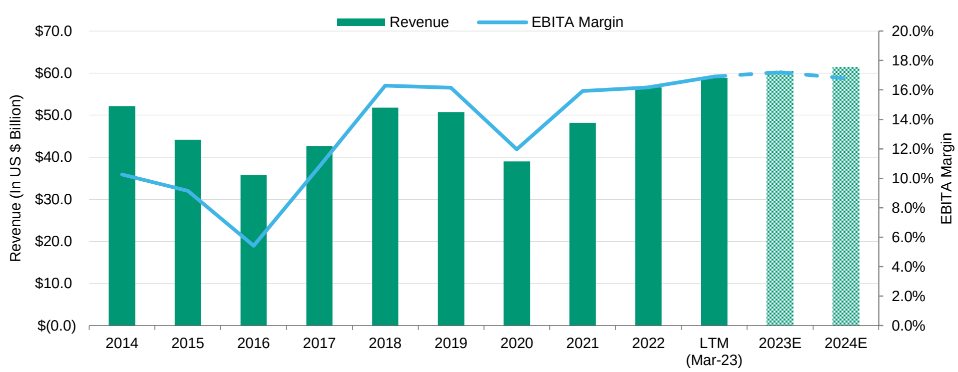
CAT made considerable progress improving downside resilience through the operational and financial rigor of its Operating & Execution model, as well as through the steady growth in services revenue. Consequently, we expect CAT to record an EBITA margin of at least 10% in a cyclical downturn. We estimate debt/EBITDA for the Machinery, Energy & Transportation (ME&T) operations to be 1.0 time, which also tempers the risks from fluctuations in end-market demand.

CAT Financial is prudently managed but is reliant on ongoing access to capital to fund new loan originations.

Exhibit 1

Implementation of Operating & Execution model in 2017 supports stronger performance during downturns and upturns

Revenue and EBITA margin, on a Moody's adjusted basis (Machinery, Energy & Transportation)



Source: Moody's Financial Metrics™; Moody's projections

Credit strengths

» Highly competitive position in key markets

» Formidable independent global dealer network

» Demonstrated benefits from Operating & Execution model throughout the business cycle

» Longer-term demand underpinned by energy transition

» Good liquidity and prudent underwriting standards at CAT Financial

Credit challenges

» Cyclicality in end-markets can cause material fluctuations in financial performance

» Sizable annual funding needs at CAT Financial require unimpeded access to capital markets and substantial sources of committed liquidity

Rating outlook

The stable outlook reflects our expectation that favorable demand conditions for CAT's machinery and services will largely be sustained, with some weakness developing in European markets in the course of 2023. Given still healthy demand across most end-markets, CAT will continue to be able to offset cost pressures with price actions.

Factors that could lead to an upgrade

» An enhancement in business position, including by profitably expanding ME&T services revenue; capitalizing on opportunities in clean energy, carbon transition, and electrification trends; and, improving returns through successful execution of the Operating & Execution model

» A step-up in EBITA margin throughout the business cycle, with expectations for the EBITA margin to approach 20% during strong market conditions, and for the EBITA margin to be sustained above 13% during weak markets

» An improvement in CAT Financial's portfolio quality, with expectations for past dues below 3.0% during weak markets, and for debt/equity to be maintained at around 7.25:1

Factors that could lead to a downgrade

» Erosion in the Operating & Execution disciplines and resulting decline in returns at various points in the business cycle, as evidenced by the EBITA margin falling below 14% during strong market conditions, or below 10% when market conditions are weak

» A more aggressive financial strategy, with debt/EBITDA above 2.25 times during strong market conditions

Key indicators

Exhibit 2

Key Indicators
Caterpillar Inc. (ME&T operations only)

US Millions	Dec-18	Dec-19	Dec-20	Dec-21	Dec-22	LTM (Mar-23)	2023P	2024P
Revenue	51,822.0	50,755.0	39,022.0	48,188.0	56,574.0	58,787.0	60,517.7	61,425.5
EBITA Margin %	17.0%	16.3%	12.0%	16.0%	16.2%	17.0%	17.2%	16.8%
Debt / EBITDA	1.2x	1.3x	2.3x	1.3x	1.1x	1.0x	1.0x	1.0x
RCF / Net Debt	122.2%	117.0%	60.3%	183.6%	156.4%	198.9%	171.2%	163.7%
FCF / Debt	31.8%	24.9%	6.1%	31.2%	23.4%	39.0%	35.4%	36.7%
EBITA / Interest Expense	16.7x	14.8x	8.0x	13.9x	17.4x	18.2x	19.8x	19.7x

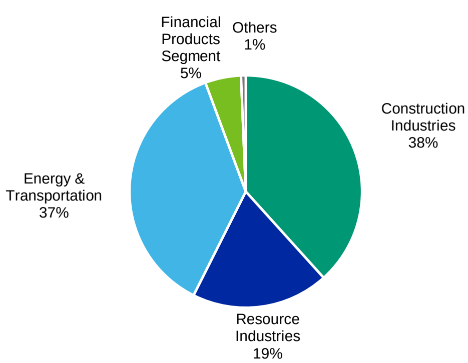
All figures and ratios are calculated using Moody's estimates and standard adjustments. Moody's Forecasts (f) or Projections (p) are Moody's opinion and do not represent the views of the issuer. Periods are Financial Year-End unless indicated. LTM = Last Twelve Months
Source: Moody's Financial Metrics™; Moody's projections

Profile

Caterpillar Inc. (CAT) is the world's leading manufacturer of construction and mining equipment, off-highway diesel and natural gas engines, industrial gas turbines, and diesel-electric locomotives. CAT primarily distributes its equipment through a global network of independent dealers, 43 of which are located in the US and 113 outside the US. Caterpillar Financial Services Corporation (CAT Financial) provides retail and wholesale financing for Caterpillar equipment, with $32.2 billion in total assets as of March 31, 2023.

Exhibit 3

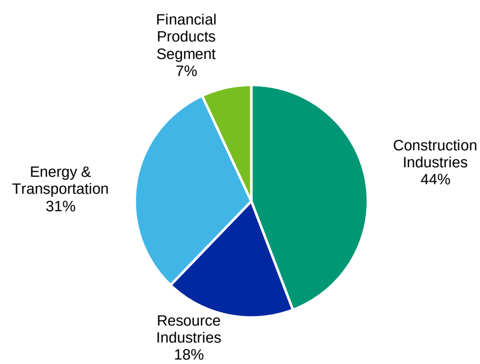
Revenue breakdown by segment
Last 12 months ended March 2023



Source: Company information

Exhibit 4

Operating income by segment
Last 12 months ended March 2023



Source: Company information

Detailed credit considerations

Highly competitive product line-up and formidable independent global dealer network

CAT has the broadest and one of the most competitive line-ups of construction, mining and energy & transportation equipment in the industry. CAT's machinery is essential to core segments of the global economy. Longer-term business prospects are favorable, in part because of the increased need for minerals that are critical for a transition to lower emission energy generation and electrification of end-use sectors.

CAT's formidable independent dealer network also provides CAT with a significant competitive advantage. The company's dealers have an extensive global presence with an excellent service quality reputation, are well capitalized, and built a sizable replacement and services business that provides essential support during cyclical downturns.

Expanding service offerings help increase margin and mitigate exposure to cyclicality in demand for new machinery

An important strategic pillar of CAT's focus on profitable growth is to significantly increase revenue from services. Services have a higher profit margin than original equipment and are less vulnerable to cyclical downturns. Services also enhance the value proposition of Caterpillar equipment for customers by improving asset utilization.

CAT's goal is to expand ME&T services revenue to $28 billion by 2026, up from $14 billion in 2016. In 2022, services revenue grew to $22 billion, or nearly 40% of total ME&T revenue.

The company aims to achieve greater services revenue by increasingly using Customer Value Agreements, the use of data derived from connected assets (including through Prioritized Service Events), online dealer parts sales, and optimizing parts availability at its dealers. More than 60% of new Caterpillar equipment was delivered with a Customer Value Agreement in 2022, and the company's global fleet comprises 1.4 million connected assets.

Operating & Execution model supports stronger performance during cyclical downturns

We expect that CAT will record an EBITA margin of at least 10% in a cyclical downturn. CAT's ability to contend with a cyclical downturn improved significantly following the implementation of the Operating and Execution model. Cyclicality in CAT's end-markets remains an ongoing risk and the resilience ensuing from the operational and financial rigor of the Operating & Execution model provides critical support to CAT's credit profile.

CAT's financial performance at the start of the pandemic demonstrates the improved resilience. CAT's EBITA margin for ME&T was 12% in 2020, when revenue declined 23% to $39 billion amid the pandemic-driven downturn. Prior to the implementation of the model, CAT's EBITA margin had sometimes fallen to the mid-single digit range. For example, CAT's EBITA margin was 5.4% in 2016, when ME&T revenue declined 19% to $36 billion.

CAT revised its financial targets in accordance with the benefits that it expects from the implementation of the Operating & Execution model. The company aims for a 300 to 600 basis point improvement in adjusted operating margin, regardless of the business cycle, compared to its performance before the implementation of the Operating & Execution model. This would translate into an adjusted operating profit margin (as defined by CAT) of 10% to 13% if revenue were to be around $42 billion, and 18% to 21% if revenue were to be around $72 billion.

Modest financial leverage mitigates financial stress during cyclical downturns

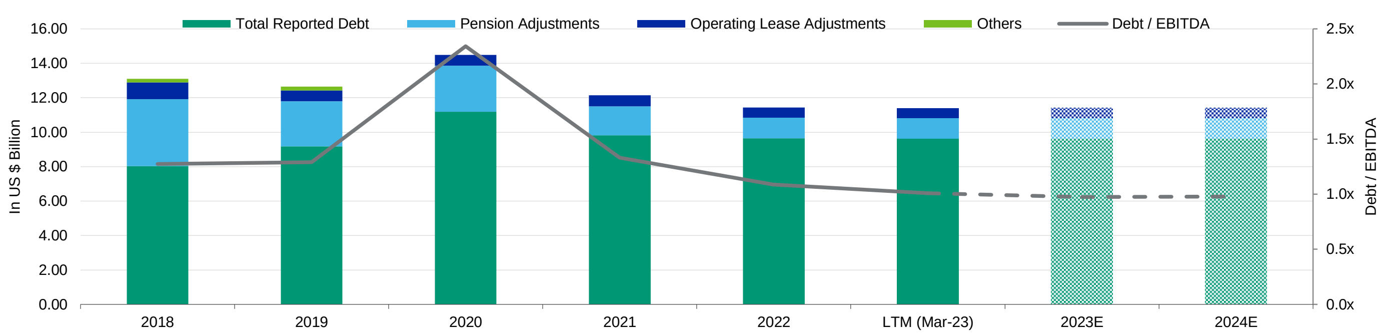
CAT's modest financial leverage at the ME&T operations also helps the company to contend with a cyclical downturn. Debt/EBITDA jumped to a still manageable 2.3 times during the pandemic in 2020, but fairly swiftly reversed to 1.3 times in 2021. We project debt/EBITDA to be 1.0 time at year-end 2023, in the absence of any debt funded acquisitions in services, technology or sustainability.

CAT is committed to return substantially all of its ME&T free cash flow (as defined by CAT) to shareholders over time, but does not typically use incremental debt to fund additional shareholder distributions.

Exhibit 5

Financial leverage returned to pre-pandemic level, after relatively moderate bounce in 2020

Total debt and debt/EBITDA, calculated on a Moody's adjusted basis



Source: Moody's Financial Metrics™; Moody's projections

The company's modest financial leverage at ME&T should also be considered in light of the considerably higher leverage and associated funding needs of its finance subsidiary, CAT Financial.

Prudent management of CAT Financial

CAT's captive finance subsidiary (CAT Financial) has an essential role in the long-term competitiveness and commercial success of CAT. CAT Financial provides retail and wholesale financing to support customers and dealers of CAT products and services globally.

CAT Financial manages its operations in a manner that supports the sale of equipment by ME&T, while preserving adequate levels of financial discipline at the same time. We calculate CAT Financial's ratio of debt/equity at 8.9 times as of March 31, 2023, virtually unchanged from 12 months prior. Past due accounts as a percent of the total portfolio were 2.00%, slightly up from as low as 1.89% at year-end 2022 but well below a peak of 4.13% in the first quarter of 2020. Past due accounts remain historically low but could start to increase somewhat amid a weakening in economies globally. Allowance for credit losses was 1.27% of finance receivables, which could also start to pick up if past due accounts were to increase. CAT Financial's ratio of past due accounts and write-offs tend to be moderately higher than those of peers during cyclical downturns.

Notwithstanding CAT Financial's asset quality and balanced leverage, we view the finance subsidiary's credit profile as “Ba” on a stand-alone basis, in line with the median “Ba” credit profile for the US finance company sector. One of the key risks reflected in the “Ba” stand-alone credit profile for CAT Financial, as well as for the broader finance company sector, is the dependence on access to significant amounts of debt to fund the origination of new receivables. As of March 31, the funding of CAT Financial's receivables portfolio included $27.4 billion of debt, of which $12.1 billion matures in the next 12 months. Any disruption in the ability of CAT Financial to access the debt markets could limit its ability to fund new retail and wholesale originations.

Nonetheless, the A2 rating of the debt that resides at CAT Financial is supported by the operating, financial and competitive strengths of CAT, the critical strategic role that CAT Financial plays in supporting ME&T, a formal support agreement between CAT and CAT Financial, and the liquidity of the consolidated group.

ESG considerations

Caterpillar Inc.'s ESG Credit Impact Score is Neutral-to-Low CIS-2

Exhibit 6
ESG Credit Impact Score

CIS-2
Neutral-to-Low

For an issuer scored CIS-2 (Neutral-to-Low), its ESG attributes are overall considered as having a neutral-to-low impact on the current rating; i.e., the overall influence of these attributes on the rating is non-material.

Source: Moody's Investors Service

CIS-2. Caterpillar's CIS-2 indicates that ESG considerations are not material to the rating. Caterpillar is exposed to moderate environmental and social risks that are in line with the broader manufacturing sector. The CIS score also factors in strong governance characteristics and conservative financial policies.

Exhibit 7
ESG Issuer Profile Scores

ENVIRONMENTAL	SOCIAL	GOVERNANCE
E-3	S-3	G-2
Moderately Negative	Moderately Negative	Neutral-to-Low

Source: Moody's Investors Service

Environmental
E-3. Caterpillar has to contend with carbon transition risks that will require Caterpillar to reduce the emissions from its heavy machinery, but likely over a more extended timeframe than for manufacturers of diesel-powered transportation equipment. Risks related to waste and pollution are in line with the broader manufacturing industry.

Social
S-3. Caterpillar's human capital risks reflect the potential for disputes with labor unions, as well as the need to attract and retain a highly skilled workforce. The company's social considerations also include health and safety risks related to employees in production facilities with heavy machinery. Caterpillar's products are also subject to high safety and quality standards.

Governance
G-2. Caterpillar pursues a conservative financial strategy and has a prudent approach to risk management. The company's management team has a strong track record, as evidenced by the effective implementation and execution of its Operating & Execution model. The organizational structure is relatively complex because of the substantial captive finance subsidiary. All board members are independent, with the exception of the board seat held by the CEO of Caterpillar.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.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
We expect liquidity at CAT and CAT Financial to remain strong. Principal liquidity sources at the end of March 2023 total $19.1 billion, comprising $6.8 billon of cash, $1.8 billion of available-for-sale debt securities, and $10.5 billion in aggregate of global credit facilities. Of the total amount of global credit facilities, $2.75 billion is currently allocated to ME&T.

In addition, we expect free cash flow (after dividends) of ME&T to be approximately $4.0 billion in 2023, assuming changes in working capital remain a substantial outflow but less than in 2022 when free cash flow was weighed down by a build-up of inventory to help manage supply chain challenges. Robust earnings growth also contributes to the increase in free cash flow in 2023 compared with free cash flow of $2.6 billion last year.

CAT has three global credit facilities: a 364-day facility of $3.15 billion that expires in August 2023; a three-year facility of $2.73 billion that expires in August 2025; and a five-year facility of $4.62 billion expiring in September 2027. CAT must comply with a (consolidated) net worth covenant, whereas CAT Financial must comply with an interest coverage ratio and a covenant leverage ratio. We expect CAT and CAT Financial to maintain ample covenant headroom.

These liquidity sources provide adequate coverage of the company's significant amount of (consolidated) debt that matures in the next 12 months. About $1 billion of debt residing at ME&T matures in the next 12 months. CAT Financial had $5.8 billion of short-term borrowings as of March 31, 2023 (mostly commercial paper) and $6.3 billion of long-term debt that matures in the next 12 months. Given the large ongoing funding needs of CAT Financial and the highly cyclical nature of CAT's end-markets, maintaining sound liquidity is a critical rating consideration.

Rating methodology and scorecard factors

The scorecard-indicated outcome for CAT using the Manufacturing methodology is Aa3 for the 12 months ended March 31, 2023. On a 12 to 18 months forward view, the scorecard-indicated outcome remains Aa3, reflecting our expectation of continuing favorable conditions for CAT's products and services.

Exhibit 8

Scorecard Factors

Caterpillar Inc. (ME&T operations only)

Manufacturing Industry Scorecard [1][2]	Current LTM 3/31/2023		Moody's 12-18 Month Forward View As of 6/22/2023 [3]	
Factor 1 : Scale (20%)	**Measure**	**Score**	**Measure**	**Score**
a) Revenue (USD Billion)	$58.8	Aaa	$61.4	Aaa
Factor 2 : Business Profile (25%)				
a) Business Profile	A	A	A	A
Factor 3 : Profitability and Efficiency (5%)				
a) EBITA Margin	17.0%	Baa	16.8%	Baa
Factor 4 : Leverage and Coverage (35%)				
a) Debt / EBITDA	1.0x	A	1x	Aa
b) Retained Cash Flow / Net Debt	198.9%	Aaa	163.7%	Aaa
c) Free Cash Flow / Debt	39.0%	Aaa	36.7%	Aaa
d) EBITA / Interest Expense	18.2x	Aa	19.7x	Aa
Factor 5 : Financial Policy (15%)				
a) Financial Policy	A	A	A	A
Rating:				
a) Scorecard-Indicated Outcome		Aa3		Aa3
b) Actual Rating Assigned				A2

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 3/31/2023(L)
[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.
Source: Moody's Financial Metrics™; Moody's projections

Ratings

Exhibit 9

Category	Moody's Rating
CATERPILLAR INC.	
Outlook	Stable
Issuer Rating	A2
Senior Unsecured	A2
Commercial Paper	P-1
Bkd Other Short Term	P-1
CATERPILLAR FINANCIAL SERVICES CORPORATION	
Outlook	Stable
Issuer Rating	A2
Senior Unsecured	A2
Commercial Paper	P-1
Other Short Term	(P)P-1
CATERPILLAR FINANCIAL AUSTRALIA LTD.	
Outlook	Stable
Commercial Paper -Dom Curr	P-1
CATERPILLAR FINANCIAL SERVICES LTD.	
Outlook	Stable
Bkd Sr Unsec MTN	(P)A2
Bkd Commercial Paper	P-1
Bkd Other Short Term	(P)P-1
CATERPILLAR FINANCE CORPORATION	
Outlook	Stable
Bkd Sr Unsec MTN	(P)A2
Bkd Commercial Paper -Dom Curr	P-1
Bkd Other Short Term	(P)P-1
CATERPILLAR INTERNATIONAL FINANCE DAC	
Outlook	Stable
Bkd Senior Unsecured -Dom Curr	A2
Bkd Commercial Paper -Dom Curr	P-1
Bkd Other Short Term -Dom Curr	(P)P-1
CATERPILLAR FINANCIAL SERVICES GMBH & CO KG	
Outlook	No Outlook
Bkd Commercial Paper	P-1

Source: Moody's Investors Service

Appendix

Exhibit 10
Peer Comparison
Caterpillar Inc.

(in US millions)	Caterpillar Inc. A2 Stable			PACCAR Inc A1 Stable			Deere & Company A2 Positive			Cummins, Inc. A2 Stable			Komatsu Ltd. A2 Stable		
	FYE Dec-21	FYE Dec-22	LTM Mar-23	FYE Dec-21	FYE Dec-22	LTM Mar-23	FYE Oct-21	FYE Oct-22	LTM Apr-23	FYE Dec-21	FYE Dec-22	LTM Mar-23	FYE Mar-21	FYE Mar-22	LTM Dec-22
Revenue	$48,188	$56,574	$58,787	$21,835	$27,314	$29,258	$40,811	$49,065	$55,764	$24,021	$28,074	$30,142	$20,653	$24,965	$25,489
EBITDA	$9,166	$10,512	$11,301	$2,167	$3,507	$3,680	$7,790	$9,029	$12,007	$3,598	$3,963	$4,372	$3,109	$4,388	$4,831
Total Debt	$12,150	$11,427	$11,401	$288	$241	$241	$12,058	$10,079	$9,892	$5,351	$9,052	$8,946	$9,687	$9,078	$9,982
Cash & Cash Equiv.	$9,392	$7,522	$7,777	$4,813	$6,159	$5,922	$7,200	$3,767	$3,602	$3,187	$2,573	$2,439	$2,200	$2,609	$2,548
EBITA Margin	16.0%	16.2%	17.0%	8.6%	11.6%	11.3%	16.8%	16.5%	19.9%	12.2%	11.6%	12.0%	8.1%	12.0%	13.9%
EBITA / Int. Exp.	13.9x	17.4x	18.2x	423.1x	411.7x	427.7x	17.1x	18.9x	24.9x	21.9x	13.7x	11.6x	10.3x	20.9x	15.0x
Debt / EBITDA	1.3x	1.1x	1.0x	0.1x	0.1x	0.1x	1.5x	1.1x	0.8x	1.5x	2.3x	2.0x	3.2x	2.2x	2.1x
RCF / Net Debt	183.6%	156.4%	198.9%	-41.2%	-43.7%	-41.8%	112.0%	99.8%	127.1%	91.1%	34.8%	39.0%	26.0%	39.2%	38.3%
FCF / Debt	31.2%	23.4%	39.0%	318.6%	620.7%	520.9%	33.1%	37.4%	79.8%	13.1%	2.6%	5.2%	11.1%	5.9%	-6.7%

All figures & ratios calculated using Moody's estimates & standard adjustments. FYE = Financial Year-End. LTM = Last Twelve Months. RUR* = Ratings under Review, where UPG = for upgrade and DNG = for downgrade.
Source: Moody's Financial Metrics™

Exhibit 11
Moody's Adjusted Debt Breakdown
Caterpillar Inc. (ME&T operations only)

(in US Millions)	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22	LTM Ending Mar-23
As Reported Debt	**8,025.0**	**9,172.0**	**11,194.0**	**9,826.0**	**9,652.0**	**9,626.0**
Pensions	3,897.0	2,624.0	2,669.0	1,682.0	1,196.0	1,196.0
Operating Leases	966.0	634.0	620.0	642.0	579.0	579.0
Non-Standard Adjustments	207.0	221.0	0.0	0.0	0.0	0.0
Moody's-Adjusted Debt	**13,095.0**	**12,651.0**	**14,483.0**	**12,150.0**	**11,427.0**	**11,401.0**

All figures are calculated using Moody's estimates and standard adjustments. Periods are Financial Year-End unless indicated. LTM = Last Twelve Months.
Source: Moody's Financial Metrics™

Exhibit 12
Moody's Adjusted EBITDA Breakdown
Caterpillar Inc. (ME&T operations only)

(in US Millions)	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22	LTM Ending Mar-23
As Reported EBITDA	**10,045.0**	**9,197.0**	**5,918.0**	**10,231.0**	**10,272.0**	**10,995.0**
Pensions	213.0	-21.0	-152.0	-1,066.0	-201.0	-135.0
Operating Leases	322.0	232.0	204.0	214.0	187.0	187.0
Unusual	93.0	65.0	0.0	0.0	254.0	254.0
Non-Standard Adjustments	0.0	384.0	242.0	-213.0	0.0	0.0
Moody's-Adjusted EBITDA	**10,673.0**	**9,857.0**	**6,212.0**	**9,166.0**	**10,512.0**	**11,301.0**

All figures are calculated using Moody's estimates and standard adjustments. Periods are Financial Year-End unless indicated. LTM = Last Twelve Months. Non-standard adjustments are adjustments related to other postemployment benefit plans (OPEB).
Source: Moody's Financial Metrics™

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