

CREDIT OPINION

22 April 2024

Update



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RATINGS

MAHLE GmbH

Domicile	Stuttgart, Germany
Long Term Rating	Ba2
Type	LT Corporate Family Ratings
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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MAHLE GmbH

Update, following stabilization of outlook

Summary

On 17 April 2024, we changed the outlook on MAHLE GmbH's (MAHLE) ratings to stable from negative. This was driven by the progress MAHLE made in 2023, resulting in profitability and leverage at levels in line with our expectations for the Ba2 rating combined with the expectation of further performance and cash flow improvements going forward.

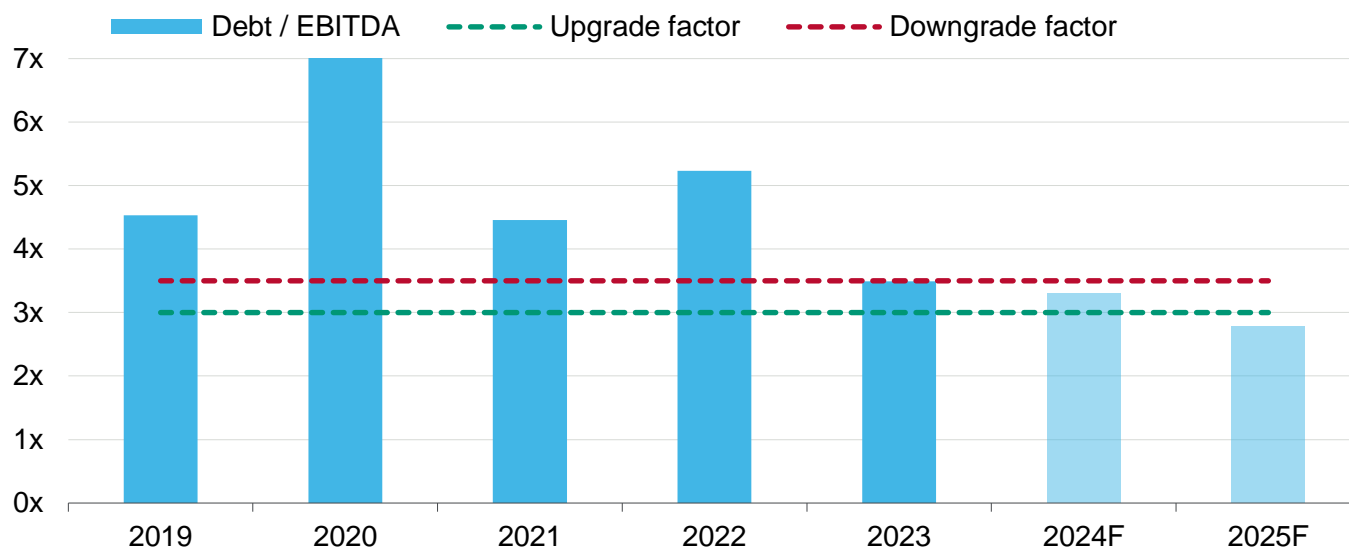
MAHLE's Ba2 Corporate Family Rating (CFR) reflects as positives the company's (1) size & scale a large global tier 1 automotive parts supplier, with annual revenues of €12.8 billion in 2023 and a well-diversified Original Equipment Manufacturer (OEM) customer base, (2) top 3 market position in its main product categories of engine systems and coolings, filtration and engine peripherals and thermal management, (3) positive strategic alignment with a strategy to address the disruptive automotive industry trend of electrification by using cash flow generated in the internal combustion engines (ICE) business to further broaden and grow its exposure to electric vehicle platforms and products that are not dependent on the powertrain (4) conservative financial policy, as reflected in a history of relatively low financial leverage and modest shareholder distributions, and (5) good liquidity profile.

The rating reflects as negatives the company's (1) exposure to the cyclicity of automotive production, which has passed its peak in 2018 and is expected to return to previous peak levels only at around mid-decade, (2) relatively low margins, given the highly competitive sector environment, limited ability to timely and completely pass-on higher production cost, and weak free cash flow generation over the last few years, (3) high investment needs into R&D and capex to make the product portfolio more independent from ICEs, (4) challenges related to carbon transition, given the high dependency on products for internal combustion engines, at a time where automakers have accelerated their electrification targets, and (5) credit metrics, which are still at the low end of Moody's Ratings requirements for the Ba2 rating category but are expected to improve further within the next 12-18 months.

The rating reflects the potential of MAHLE to further strengthen and consolidate its position in the ICE-related business. While the business faces secular demand decline, we believe that managing it to cost competitiveness will allow the group to generate significant funds that can be invested into other businesses so that the relative share of the ICE-related business will materially shrink over time. Considering the still significant challenges for a broader adoption of pure electric vehicles, related to, amongst other things, consumer preferences, charging infrastructure and range, we believe that the demand decline for such products will be in the low single digit percentages per year and hence manageable for MAHLE.

Exhibit 1

MAHLE's Moody's adjusted Debt / EBITDA is expected to be in line with the requirements for a Ba2 in the 12-18 months



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

Periods are financial year-end. Y-axis capped at 7x

Moody's forecasts are Moody's opinion and do not represent the views of the issuer.

Source: Moody's Financial Metrics™ and Moody's Ratings forecasts

Credit strengths

- » Leading position as a large global tier 1 automotive parts supplier
- » Positive strategic alignment to address the disruptive trend of electrification and strengthen the position in mature product segments
- » Conservative financial policy and good liquidity

Credit challenges

- » Exposure to the cyclical nature of automotive production
- » Low profit margins, limited ability to timely and completely pass-on higher production cost
- » High investment needs to reduce historically high reliance on ICE technologies

Rating outlook

The stable outlook reflects the expectation that MAHLE will make further progress in terms of profitability and leverage within the next 12-18 months, reaching credit metrics well in line with Moody's Ratings expectations for the Ba2 CFR. More specifically, Moody's Ratings expects EBITA margins to improve within the range of 3%-5% and leverage to decline within the range of 3.0x-3.5x, which are appropriate ranges for the Ba2. The stable outlook also reflects the expectation of stable free cash flows on a Moody's adjusted basis.

Factors that could lead to an upgrade

- » Debt/EBITDA (Moody's adjusted) below 3.0x,
- » EBITA margins (Moody's adjusted) above 5%,

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.

- » Retained cash flow (RCF) / net debt (Moody's adjusted) of more than 20%, and
- » Reduced exposure to products used for internal combustion engines only, including plug-in hybrids.

Factors that could lead to a downgrade

- » Debt/EBITDA (Moody's adjusted) failed to improve to below 3.5x
- » EBITA margins (Moody's adjusted) failed to reach 3% at least,
- » Retained cash flow (RCF) / net debt (Moody's adjusted) below 15%, or
- » Liquidity weakened.

Key indicators

Exhibit 2

MAHLE GmbH

(in € billions)	2019	2020	2021	2022	2023	2024F	2025F
Revenue	12.0	9.8	10.9	12.4	12.8	12.0-13.0	13.0-13.5
EBITA Margin %	1.7%	-0.9%	2.1%	1.0%	3.5%	3.75%-4.25%	4.5%-5.5%
EBITA / Interest Expense	2.0x	-0.9x	1.9x	0.4x	1.9x	2.0x	2.5x
RCF / Net Debt	16.4%	26.1%	20.3%	1.2%	14.6%	25%-30%	30%-35%
Debt / EBITDA	4.5x	7.5x	4.5x	5.2x	3.6x	3.0x-3.5x	2.5x-3.0x
EBITDA Margin %	5.7%	3.9%	6.5%	4.9%	7.2%	7.75%-8.25%	8.5%-9%
FCF / Debt	-1.7%	11.6%	-3.4%	-16.9%	-2.5%	-2% - 0%	2% - 5%

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Source: Moody's Financial Metrics™ and Moody's Ratings forecasts

Profile

MAHLE GmbH, headquartered in Stuttgart, Germany, is one of the top 25 global automotive parts suppliers. MAHLE's three main business segments are Thermal management (36% of 2023 sales), Engine Systems and Components (21%) and Filtration and Engine Peripherals (18%). In 2023, MAHLE generated revenues of around €12.8 billion. MAHLE, which employed around 72,000 employees and produced in 148 locations worldwide in 2023, is owned by the MAHLE Foundation. The company owns a 61% stake in the MAHLE Metal Leve S.A., which is publicly listed in Brazil and had a market capitalization of around BRL4.7bn (€860m) as of 12 April 2024.

Detailed credit considerations

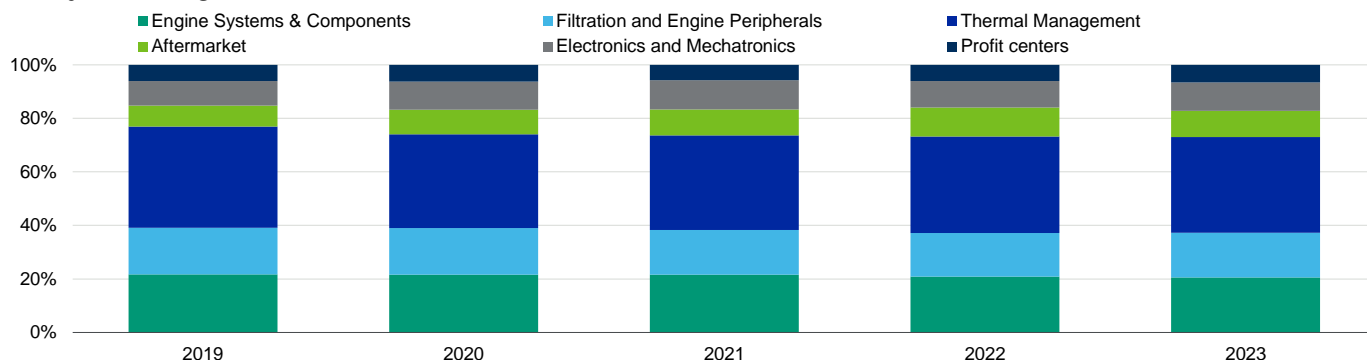
MAHLE GmbH's ESG credit impact score is CIS-4

With annual revenues of €12.8 billion (2023), MAHLE is a large global tier 1 automotive parts supplier. MAHLE's product portfolio is diversified into 29 main product categories for light vehicles and trucks. In 23 of these product categories, MAHLE ranks among the top three players, according to its own calculations.

The main business units are Engine Systems and Components (e.g., pistons, bearings and camshafts), Filtration and Engine Peripherals (e.g., oil and fuel filters, air intake modules and filters), and Thermal Management (e.g. air condition and engine cooling modules). The company also has two minor units, Electronics and Mechatronics (10% of revenues) and Aftermarket (11% of revenues).

MAHLE's main competitors are in the areas of (i) engine systems and components [Tenneco Inc.](#) (B2 stable) and [Rheinmetall AG](#) (Baa2 stable, especially pistons and bearings), (ii) filtration and engine peripherals Mann + Hummel and [Denso Corporation](#) (Denso, A2 stable) and (iii) thermal management Denso and [Valeo S.A.](#) (Baa3 negative).

Exhibit 3
Sales by business segment from 2019 to 2023

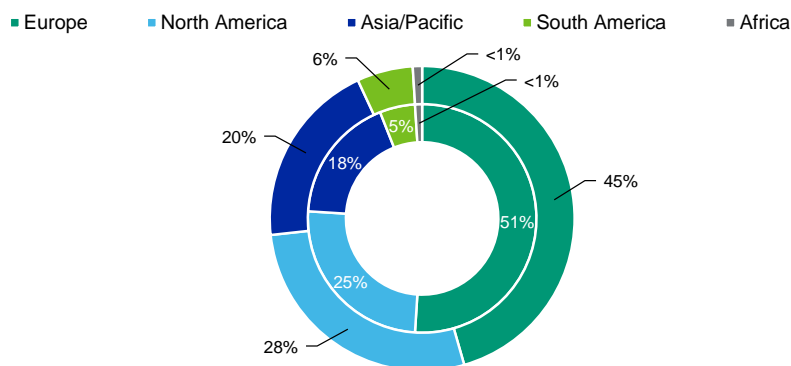


Periods are financial year-end unless indicated.

Source: Company filings

MAHLE is a global player, with 148 production facilities and 11 major R&D centers around the world. Its revenues are well diversified to all major regions of the world, with around 45% coming from Europe and 28% from North America. MAHLE also generates a sizeable part of its revenues in the APAC region (20%), which has shown a stronger volume development compared to the more mature markets in Europe and North America. Like most of its European peers, however, MAHLE's exposure to APAC lags behind the region's share in global light vehicle sales (approximately 51% in 2023, according to Moody's calculations).

Exhibit 4
Sales by geography 2023 (outside circle) vs. 2015 (inside circle)
Sales split by manufacturing country



Source: Company filings

MAHLE's customer base comprises of a well-diversified group of highly rated global automotive original equipment manufacturers (OEMs), which produce passenger cars, commercial vehicles, trucks and motorbikes. The 10 largest customers account for less than 50% of the group's revenues, with the largest one accounting for around 10%. Moreover, MAHLE's nine largest customers are all rated investment grade at Moody's.

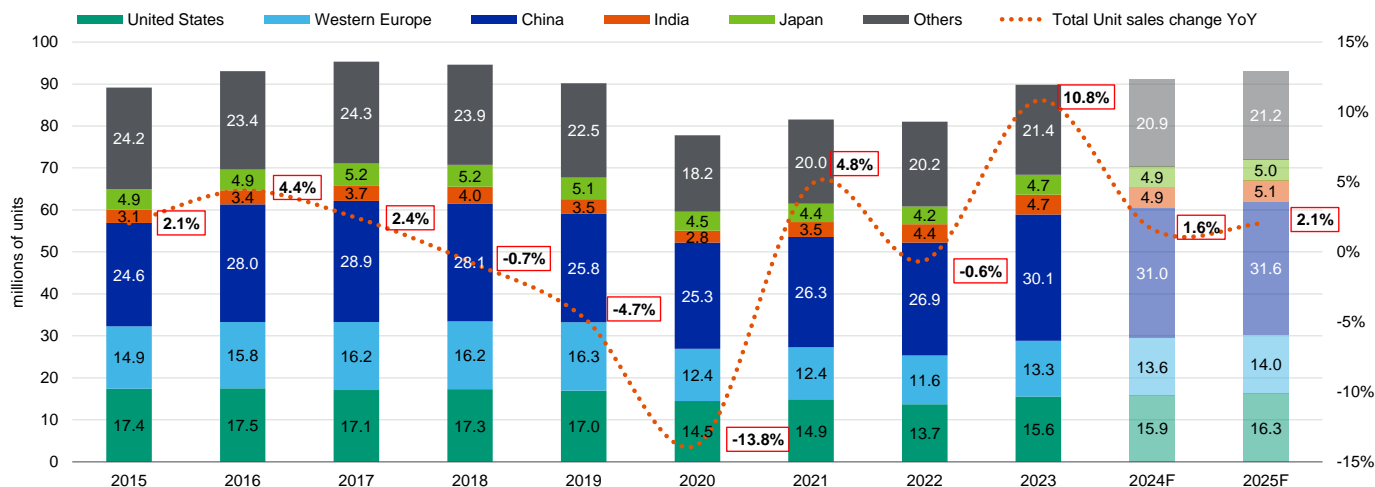
MAHLE GmbH's ESG credit impact score is CIS-4

MAHLE, like most global auto suppliers, has a strong reliance on the production rates of light vehicles by various OEMs. After several years of continuous growth during the last decade, global light vehicle sales peaked at around 95 million units in 2017 and 2018, before contracting by 14% in 2020 because of the coronavirus pandemic. Volumes thereafter recovered by just about 4% in 2021 and remained broadly flat in 2022, constrained by the global shortage of semiconductors. Global light vehicle sales saw a strong recovery by 10.8% in 2023 thanks to an easing stress on global automotive supply chains (such as semiconductors).

We forecast global GDP growth 2.4% in 2024 and 2.6% in 2025, reflecting a steady normalization of economic activity (see [Global Macro Outlook 2024-25 \[February 2024 Update\]](#)). The [growth in global light vehicle sales will likely be muted at 1.6% in 2024](#) after the strong finish in 2023. For 2025, we expect global unit sales to reach around 93 million - lower than the peak of 95 million in 2017.

Exhibit 5

Recovery of global auto market in 2023 and 2024 Our projections for global light vehicle unit sales



China unit sales represent auto sales, including those of both passenger and commercial vehicles.

Moody's forecasts are Moody's opinion and do not represent the views of the issuer.

Source: ACEA, CAAM, LMC, and Moody's Ratings forecasts

Despite this cyclicity, we expect MAHLE to nevertheless outperform the market by around 1% over time, reflecting its strong positioning in conventional combustion technologies and its growing product portfolio in the area of electric drive systems and power electronics.

MAHLE GmbH's ESG credit impact score is CIS-4

MAHLE is highly exposed to the automotive industry megatrend of carbon transition and electrification. Around 40% of MAHLE's revenues related to light vehicles in 2022 were dependent on internal combustion engine (ICE) related products. As a result of increasing environmental standards and stricter carbon regulation worldwide, the share of ICE in global light vehicles will gradually decline over the next years, with full and plug-in hybrid electric vehicles and battery electric vehicles gaining rapidly in market share.

In our report [Slowdown in EV adoption as subsidies end, charging network expansion lags](#), published in April 2024, we forecast that the share of BEVs will approach about a third of global light vehicle sales in 2030 and around half by 2035, compared with only 12.5% in 2023. In Europe, MAHLE's largest region, we expect the share of BEVs to grow to even 85-90% by 2035, from around 15% in 2023. This expectation is driven by regulation in the EU and the UK, which aim to transition to zero emission vehicles. Trends in the bus and truck markets, where MAHLE generates approximately 20% of revenues, are similar, although the carbon transition will take longer and diesel will represent the majority of vehicle sales at least until end of decade.

To address the challenge of electrification, MAHLE has established the strategy MAHLE 2030+, which aims to strengthen its position in the three strategic fields: 1) Thermal management: MAHLE aims to remain a leader in thermal solutions, driving energy efficiency and cabin comfort, 2) Electrification: MAHLE will invest in its product portfolio in the area of highly efficient electric powertrain solutions, and 3) ICE: MAHLE aims to continue with advanced technologies for clean ICEs at competitive costs. As a result of the development of new technologies, MAHLE aims to reduce its dependency on ICE-related light vehicle sales gradually towards 25% in 2030. This shift will be supported by substantially higher content per vehicle for plug-in hybrid electric vehicles and for BEVs, compared to a conventional ICE powered vehicles.

MAHLE GmbH's ESG credit impact score is CIS-4

MAHLE's operating profit margins (Moody's adjusted EBITA) amounted to around 4% during 2016-18, a relatively low level, which is illustrative of the highly competitive automotive industry environment, and high investments (R&D and capex) needed to manage the automotive industry transformation, especially in terms of carbon transition. The low margin level is, however, largely in line with the overall sector.

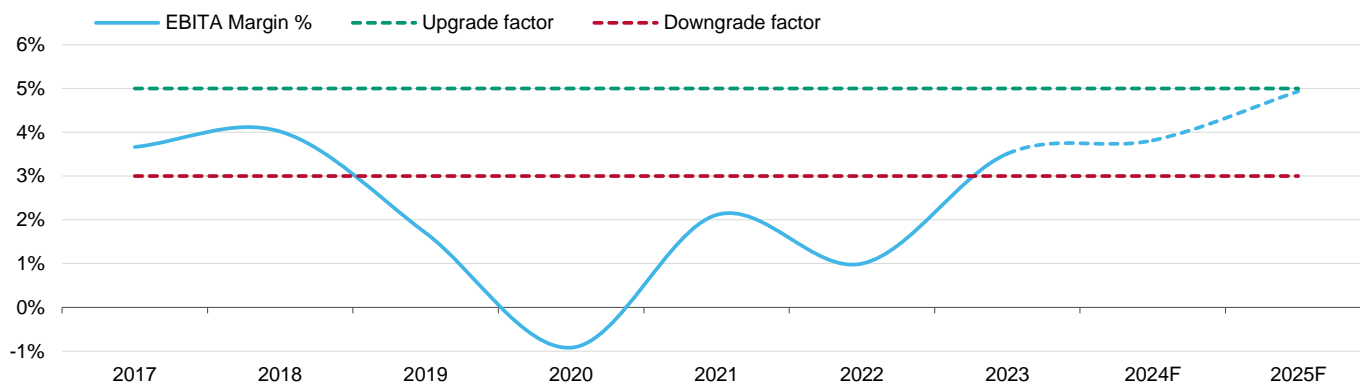
MAHLE's margin turned slightly negative in 2020, as a result of the pandemic and a drop in global light vehicle production of around 15%. To address this challenge, MAHLE has implemented a €200 million long-term cash savings program in 2020, equivalent to around 2% of group revenues. The restructuring expenses were charged in 2020 and contributed to the negative margin. The restructuring measures contributed to the margin improvement in 2021, but headwinds such as increased cost for raw materials, logistics and energy of around €300 million (2.8% of revenues), which could not be passed on to OEM customers immediately, and overall still low volumes left margins at low levels of around 2%. In 2022, where volumes remained flat, MAHLE's margins continued to suffer from higher cost for materials, freight and energy, especially in the Thermal Management division. In addition, upfront investments in the Electronics and Mechatronics division continued.

In 2023, MAHLE's sales increased by 3% to €12.8 billion from €12.4 billion, while its company-reported EBIT margin improved sharply to €304 million (2.4% margin), from €60 million (0.5% margin) in 2022. The improvement was driven by higher volumes and sales prices, which over-compensated inflationary effects at personnel and energy cost. Margins remained, however, constrained by weak profitability in the thermal management division as well as negative one-offs and high upfront cost in the Electronics and Mechatronics division. On a Moody's adjusted basis, MAHLE's EBITA margin in 2023 improved to 3.5%, which is still low but acceptable for the Ba2 rating.

For 2024, we expect broadly stable revenues but a further improvement in margins due to continued efficiency measures and reduced losses at the Electronics and Mechatronics division.

Exhibit 6

MAHLE's EBITA margins have recovered in 2023 and are expected improve further



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Periods are financial year-end unless indicated.

Source: Moody's Financial Metrics™ and Moody's Ratings forecasts

MAHLE GmbH's ESG credit impact score is CIS-4

MAHLE has maintained good liquidity (which was important to manage materially negative free cash flow generation in the first half of 2022 and 2023) and modest shareholder distributions. MAHLE's debt (Moody's adjusted, including pension provisions) amounted to €3.3 billion, which leads to a debt/EBITDA (Moody's adjusted) of 3.6x at the end of 2023.

Our debt calculation does not include off-balance rental and leasing agreements in the amount of €222.8 million as of December 2023. However, we do not expect a debt adjustment to increase our leverage calculation, because we would also add back the rental and leasing expenses, which are not separately disclosed but included in MAHLE's operating expenses. Furthermore, the add-back would even slightly improve our adjusted EBITA margin.

For 2024, we expect higher profitability to reduce the company's leverage, in addition to proceeds from the [sale of MAHLE's 50% stake in BHTC joint venture](#), which was concluded in early April 2024.

We consider MAHLE's financial policy, which includes a declared net debt/EBITDA target of below 2x (company defined), as well as the very low shareholder distributions to the MAHLE Foundation as conservative. Given its ownership structure, however, the company has no access to equity capital markets and therefore limited ability to manage its leverage in line with its target at times of weak operating profitability.

Structural considerations

The rating of the new guaranteed senior unsecured notes is aligned with MAHLE's CFR of Ba2. The guarantee has been provided by certain operating subsidiaries of MAHLE in Europe, North America and Japan, where the company has full ownership. These operating companies represent a material part of MAHLE's group EBITDA. The company's new senior unsecured revolving credit facility (RCF) benefits from similar guarantees.

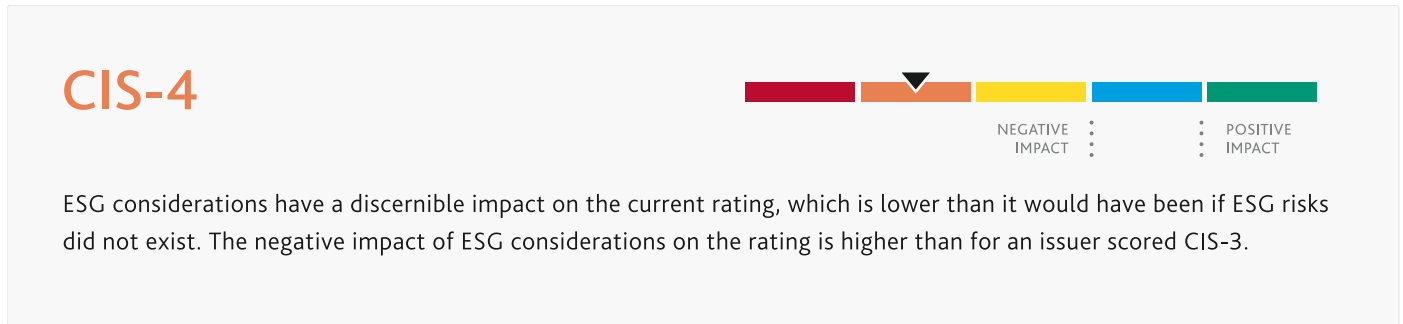
MAHLE's senior unsecured notes issued in 2021 are not guaranteed and are rated at Ba3, one notch below the CFR. This reflects the relatively weaker positioning compared to the new notes and the RCF, as well as to trade claims and pension provisions at the level of operating subsidiaries which are in aggregate material in size and have higher seniority in the debt structure of MAHLE.

ESG considerations

MAHLE GmbH's ESG credit impact score is CIS-4

Exhibit 7

ESG credit impact score

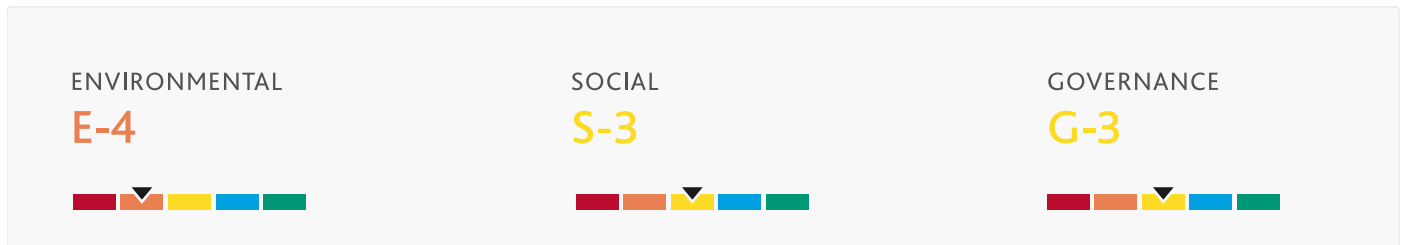


Source: Moody's Ratings

MAHLE's **CIS-4** indicates that the rating is lower than it would have been if ESG risk exposures did not exist. This is driven by the company's product portfolio, which has a high share of products for internal combustion engines (ICE), exposing the company to carbon transition risks. In most other E, S and G risk categories, MAHLE is exposed to moderately negative or just neutral-to-low risks.

Exhibit 8

ESG issuer profile scores



Source: Moody's Ratings

Environmental

MAHLE's **E-4** is driven by carbon transition risks. Around 40% of MAHLE's revenues come from ICE technologies for light vehicles. MAHLE's dual strategy addresses this risk, but we note that the carbon transition process will require high investments into R&D and capex. By contrast, the exposure of MAHLE's manufacturing processes to waste and pollution, water management, natural capital and physical climate risks is relatively low.

Social

MAHLE's **S-3** is in line with the overall automotive parts suppliers sector. In terms of human capital, we note that around two thirds of its employees are being employed in Europe and North America, where retention of skilled manufacturing workforce is typically easier than in developing countries. MAHLE is also exposed to health & safety risks. This is exemplified by the global coronavirus outbreak and its negative impact on global light vehicle production and consumer demand. Cost related to stricter health & safety requirements will also weigh somewhat on operating efficiency.

Governance

MAHLE's **G-3** is supported by the company's prudent financial strategy and risk management, including the net leverage target of below 2x, a conservative M&A policy and moderate shareholder distributions. The company is owned by a foundation, which guarantees a long-term stable ownership structure. Voting rights lie with MABEG, an independent shareholders' committee comprising of external industry experts. Dividend payments to the foundation are relatively moderate, allowing MAHLE to retain most of the cash generated and invest it into future technologies. However, a negative aspect is the lack of access to equity capital markets. The company also has established an organizational structure, which is appropriate for its size and complexity. MAHLE has a highly experienced management team. The company's management's credibility and track record have, however, suffered from recent fluctuation at the CEO and CFO levels. Some weaknesses also relate to MAHLE's financial reporting, which is less detailed compared to its publicly listed peers, as well as limited disclosure in terms of management compensation design.

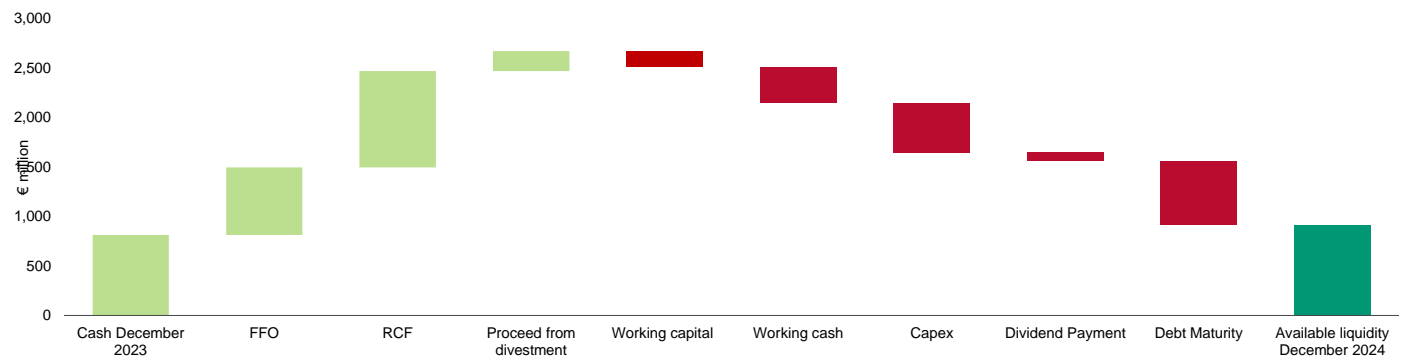
ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moody's.com. In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Liquidity analysis

We consider MAHLE's liquidity position to be good. The company's main sources of liquidity include (1) cash on the balance sheet of €813 million (as of December 2023) and (2) Moody's Ratings estimate of annual funds from operations of around €600 million. The company also has a new €1.2 billion revolving credit facility (RCF) maturing in February 2027, which is largely undrawn. The RCF has certain financial covenants, to which it currently has ample headroom. With this, MAHLE's liquidity sources over the next 12 months amount to approximately €2.5 billion under the stressed assumption of no access to capital markets.

These liquidity sources comfortably exceed liquidity uses of around €1.5 billion, mainly comprising of capital spending, which we expect at around €500 million, and €600 million short-term debt maturities. Uses of liquidity further include Moody's working cash assumption of €400 million.

Exhibit 9
MAHLE's liquidity is good
 Liquidity sources and uses from December 2023 to December 2024



Source: Moody's Ratings calculation

Rating methodology and scorecard factors

The actual rating assigned of Ba2 is in line with the scorecard-indicated outcome, based on financial metrics for the last twelve months ending December 2023.

Our 12-18-months forward-view anticipates some improvements in cash flows and leverage, positioning the scorecard-indicated more solidly within the Ba2 category, also in line with the actual rating assigned.

Exhibit 10

Rating Factors MAHLE GmbH

Automotive Supplier Industry Scorecard			Current FY Dec-23		Moody's 12-18 month forward view	
Factor	Measure	Score	Measure	Score		
Factor 1 : Scale (10%)						
a) Revenue (\$ billions)	13.6	Baa	13 - 14	Baa		
Factor 2 : Business Profile (15%)						
a) Business Profile	Ba	Ba	Ba	Ba		
Factor 3 : Profitability and Efficiency (25%)						
a) EBITA Margin	3.5%	Caa	4% - 5%	Caa		
b) Expected Free Cash Flow Stability	Ba	Ba	Ba	Ba		
Factor 4 : Leverage and Coverage (30%)						
a) Debt / EBITDA	3.6x	B	2.8x - 3.3x	Ba		
b) EBITA / Interest Expense	1.9x	B	2x - 2.5x	B		
c) Retained Cash Flow / Net Debt	14.6%	B	25% - 30%	Baa		
Factor 5 : Financial Policy (20%)						
a) Financial Policy	Baa	Baa	Baa	Baa		
Rating:						
a) Scorecard-Indicated Outcome		Ba3		Ba2		
b) Actual Rating Assigned				Ba2		

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Source: Moody's Financial Metrics™ and Moody's Ratings forecasts

Appendix

Exhibit 11

Peer Comparison MAHLE GmbH

(in \$ millions)	MAHLE GmbH Ba2 Stable			Schaeffler AG Baa3 Stable			Valeo S.E. Baa3 Negative			ZF Friedrichshafen AG Ba1 Stable		
	FY Dec-21	FY Dec-22	FY Dec-23	FY Dec-21	FY Dec-22	FY Dec-23	FY Dec-21	FY Dec-22	FY Dec-23	FY Dec-21	FY Dec-22	FY Dec-23
Revenue	12,936	13,104	13,861	16,389	16,662	17,641	20,424	21,118	23,838	45,330	46,163	50,422
EBITDA	847	646	994	2,629	2,076	2,071	1,778	1,770	1,855	4,142	3,567	4,355
Total Debt	3,629	3,424	3,484	7,429	5,589	6,758	8,097	8,932	9,077	20,521	17,458	19,207
Cash & Cash Equivalents	1,262	644	899	1,821	877	564	2,746	3,553	3,342	2,652	2,687	4,018
EBITA Margin %	2.1%	1.0%	3.5%	9.3%	6.4%	6.0%	3.0%	3.0%	2.7%	5.1%	4.0%	5.1%
EBITA / Interest Expense	1.9x	0.4x	1.9x	6.1x	4.2x	4.1x	3.4x	2.6x	1.6x	3.3x	2.6x	2.8x
Debt / EBITDA	4.5x	5.2x	3.6x	2.9x	2.7x	3.2x	4.7x	5.0x	4.8x	5.2x	4.8x	4.3x
Net Debt / EBITDA	2.9x	4.2x	2.7x	2.2x	2.2x	2.9x	2.7x	3.0x	3.0x	4.5x	4.1x	3.4x
RCF / Debt	13.3%	1.0%	14.6%	24.4%	21.9%	15.5%	16.6%	9.4%	9.7%	16.0%	14.8%	14.4%

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

Source: Moody's Financial Metrics™

Exhibit 12

Moody's-adjusted debt reconciliation MAHLE GmbH

(in € millions)	2019	2020	2021	2022	2023
As reported debt	1,911.4	1,798.9	2,168.1	2,284.4	2,167.6
Pensions	702.2	738.4	800.8	843.6	841.4
Securitization	29.9	46.2	32.8	80.5	271.0
Non-Standard Adjustments	445.2	236.2	189.7	-	-
Moody's-adjusted debt	3,088.7	2,819.7	3,191.4	3,208.6	3,280.0

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

Source: Moody's Financial Metrics™

Exhibit 13

Moody's-adjusted EBITDA reconciliation MAHLE GmbH

(in € millions)	2019	2020	2021	2022	2023
As reported EBITDA	727.0	432.7	802.6	681.0	947.0
Securitization	0.8	-	0.6	2.9	7.2
Interest Expense - Discounting	(53.1)	(55.1)	(55.8)	(30.8)	(22.5)
Unusual Items	6.4	-	(31.5)	(40.0)	(12.8)
Moody's-adjusted EBITDA	681.1	377.6	715.9	613.1	918.9

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

Source: Moody's Financial Metrics™

Ratings

Exhibit 14

Category	Moody's Rating
MAHLE GMBH	
Outlook	Stable
Corporate Family Rating	Ba2
Senior Unsecured -Dom Curr	Ba3/LGD5

Source: Moody's Ratings

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