

CREDIT OPINION

28 April 2022

Update



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RATINGS

MAHLE GmbH

Domicile	Stuttgart, Germany
Long Term Rating	Ba1
Type	LT Corporate Family Ratings
Outlook	Negative

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 rating affirmation

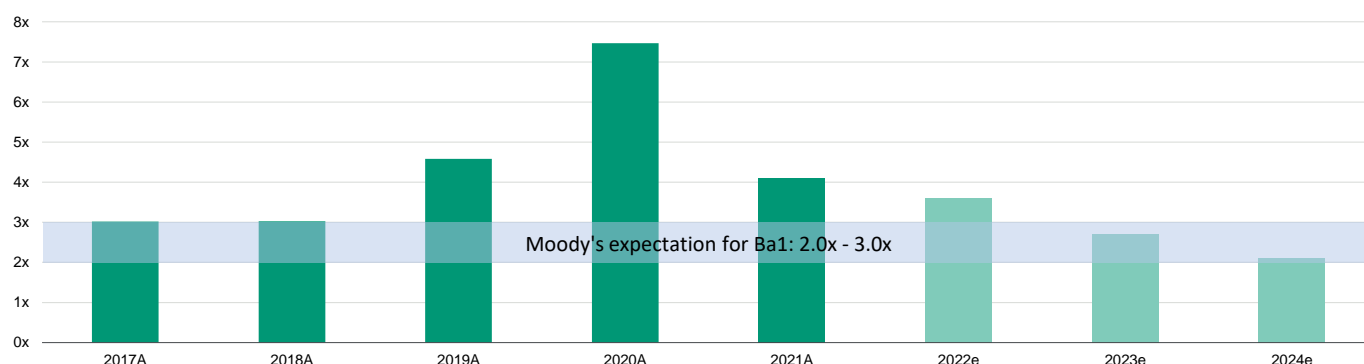
Summary

MAHLE GmbH (MAHLE)'s Ba1 Corporate Family Rating (CFR) reflects as positives the company's (1) size & scale as one of the world's 25 largest tier 1 automotive parts suppliers, with annual revenues of around €12 billion during the years 2016-19 and a well-diversified 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 dual 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 also faces supply chain risks and cost inflation, (2) relatively low margins, given the highly competitive sector environment, 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, and (4) challenges related to carbon transition, given the high dependency on products for internal combustion engines (ICEs), at a time where automakers have accelerated their electrification targets.

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. At the same 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 Debt / EBITDA is expected to be in a range of 2x - 3x (Moody's adjusted)

Source: Company data, Moody's estimates

Credit strengths

- » Leading position as one of the world's 25 largest 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
- » High investment needs to reduce historically high reliance on ICE technologies

Rating outlook

The negative outlook reflects the slow recovery of global light vehicle sales after the trough in 2020 with further headwinds from the conflict in the Ukraine including significant cost inflation, which will leave MAHLE's margins and leverage weakly positioned for the Ba1 in 2022 at least. The negative outlook also reflects challenges for MAHLE to recover margins into a range of 4%-6% (Moody's adjusted EBITA) and reduce debt/EBITDA (Moody's adjusted) to a maximum of 3x by 2023, which is required for the Ba1.

Factors that could lead to an upgrade

- » Debt/EBITDA (Moody's adjusted) below 2.0x, and
- » EBITA margins (Moody's adjusted) exceeded 7%, and
- » FCF sustained positive.

Factors that could lead to a downgrade

- » Debt/EBITDA (Moody's adjusted) failed to improve to below 3x
- » EBITA margins remained below 4% (Moody's adjusted), or

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

- » FCF sustained negative, or
- » Liquidity weakened.

Key indicators

Exhibit 2

	2016	2017	2018	2019	2020	2021	2022e	2023e
Revenue (USD Bn)	13.63	14.45	14.86	13.49	11.16	12.25	12-13	13-14
EBITA Margin %	4.2%	4.0%	4.0%	1.6%	-0.9%	2.6%	2.5%-3.0%	4.0%-5.0%
Debt / EBITDA	3.1x	3.0x	3.0x	4.6x	7.5x	4.1x	3.25x-3.75x	2.5x-3.0x
EBITA / Interest Expense	4.5x	5.5x	4.2x	1.9x	-0.9x	2.7x	3.5x-4.0x	5x-6x
RCF / Net Debt	33.0%	35.9%	24.3%	16.4%	26.1%	20.7%	15%-20%	30%-35%

All ratios are based on 'Adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations
Source: Moody's Financial Metrics™

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 (37% of 2021 sales), Engine Systems and Components (24%) and Filtration and Engine Peripherals (18%). In 2021, MAHLE generated revenues of around €10.9 billion. MAHLE, which employed around 71.000 employees and produced in around 160 locations worldwide in 2021, is owned by the MAHLE Foundation.

Detailed credit considerations

Leading position as one of the world's 25 largest tier 1 automotive parts supplier

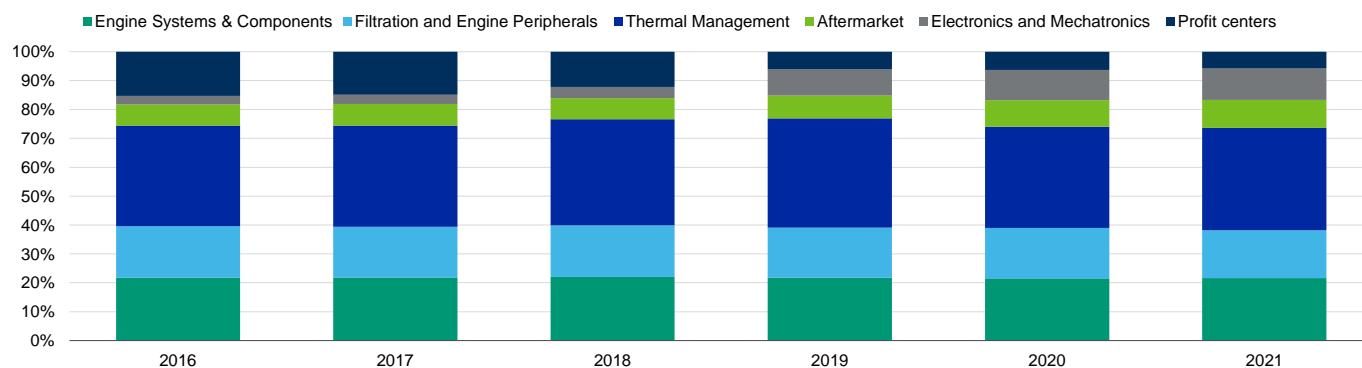
With annual revenues of nearly €11 billion (2021), MAHLE is one of the world's 25 largest automotive parts suppliers. MAHLE's product portfolio is diversified into 29 main product categories for light vehicles and trucks. In 23 of these product categories, MAHLE ranks among the top three players, according to its own calculations.

The main business units are Engine Systems and Components (e.g., pistons, bearings and camshafts; 22% of 2021 revenues), Filtration and Engine Peripherals (e.g., oil and fuel filters, air intake modules and filters; 17% of revenues), and Thermal Management (e.g. air condition and engine cooling modules; 35% of revenues). The company also has two minor units, Electronics and Mechatronics (11% of revenues) and Aftermarket (10% 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 and (iii) thermal management Denso and [Valeo S.A.](#) (Baa3 stable).

Exhibit 3

Sales by business segment from 2016 to 2021



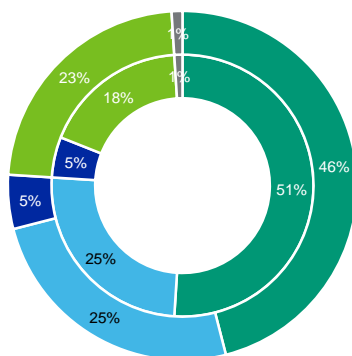
Source: Company Annual Report

MAHLE is a global player, with 160 production facilities and 12 major R&D centers around the world. Its revenues are well diversified to all major regions of the world, with around 46% 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 47% in 2020, according to Moody's calculations). With the acquisition of Keihin's air conditioning business in February 2021, MAHLE's presence in Japan, Thailand and the US will be strengthened slightly.

Exhibit 4

Sales by geography 2019 (outside circle) vs. 2015 (inside circle)
Sales split by manufacturing country

■ Europe ■ North America ■ South America ■ Asia/Pacific ■ Africa



Source: Company Annual Report

MAHLE's customer base comprises of a well-diversified group of highly rated global automotive manufacturers (OEMs). The 10 largest customers account for only 50% of the group's revenues, with only one accounting for more than 10%. Moreover, MAHLE's nine largest customers are all rated investment grade at Moody's. We note that the recent merger of FCA and Peugeot to create Stellantis in January 2021 has brought additional challenges to its suppliers like MAHLE, considering that Stellantis has guided to material synergies also from more efficient sourcing. However, we expect that MAHLE will have some potential to offset potential pricing pressure with raising efficiencies.

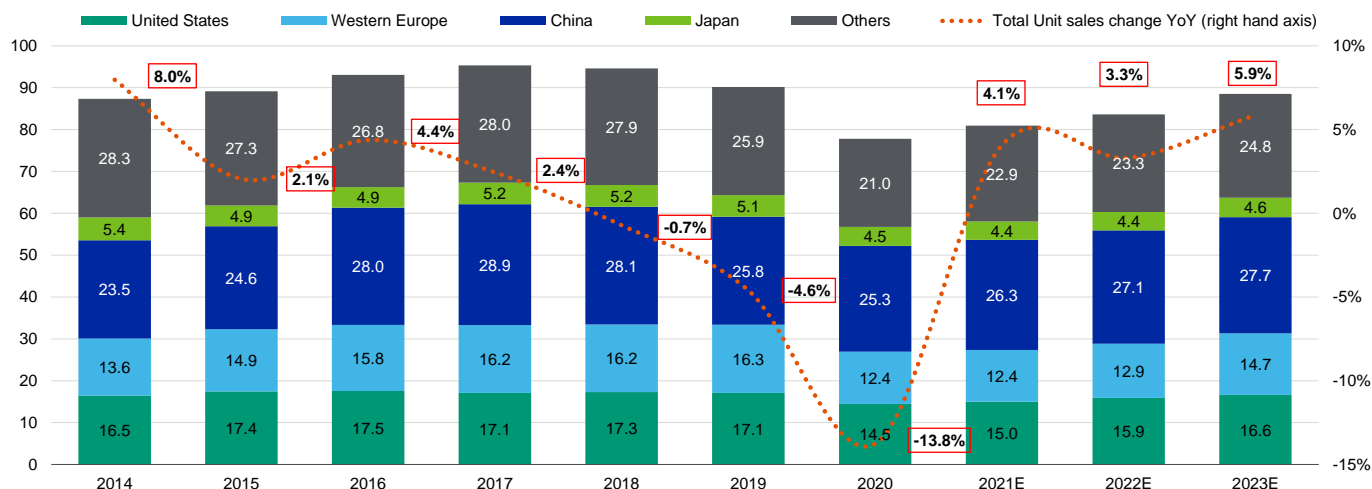
Exposure to the cyclicity of automotive production

MAHLE, like most global auto suppliers, has a strong reliance on the production rates of light vehicles by the various OEMs. Global light vehicle sales plummeted 14% in 2020 because of the pandemic and recovered by only around 4% in 2021, as production was constrained by a global shortage of semiconductors. We forecast 3.6% global GDP growth for 2022 and 3.0% for 2023, with growth rates suffering from continued supply disruptions for semiconductors as well as the direct and indirect effects of Russia's invasion of Ukraine (see [Global Macro Outlook 2022-23 \[March 2022 Update\]](#)). For the auto sector, this means a more muted recovery path, with global light vehicle sales growing by only around 3.3% in 2022 and 5.9% in 2023 (see our [Global Automotive Industry Outlook](#), published April 2022). With this, global light vehicle sales will remain short of the 2019 sales level of 90 million units and much less than the peak of 95 million units in 2017.

Exhibit 5

Global sales are unlikely to recover to the pre-downturn levels until mid-2020s

Our projections for global light vehicle unit sales (in million units)



Source: ACEA, CAAM, LMC, and Moody's estimates

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.

Dual strategy helps address challenges of automotive industry

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 2021 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 (71% gasoline and 17% diesel in 2019) will gradually decline over the next years, with full and plug-in hybrid electric vehicles (4%) and battery electric vehicles (BEV, 2%) gaining rapidly in market share. In 2021, the share in BEVs in the EU increased to 8.2%, from 5.9% in 2020 and 2.2% in 2019, and the share of hybrid electric vehicles increased to 25.2% in 2021, from 15.4% in 2020 and 6.6% in 2019, according to ACEA (as %ages in light vehicle sales). 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.

In our report [Automakers' move to alternative fuels will hurt returns; updated forecasts show faster adoption](#), we said that we forecast the share of alternative fuel vehicles (including BEVs and hybrid electric vehicles) will approach 40% in global light vehicle sales at the end of this decade, compared to only 4% in 2020. BEVs will be the most important AFV technology, with around 25% of global light vehicles. Our expectation considers that the electrification trend in regions like Europe and China will be much quicker compared to most developing countries, where the charging infrastructure is a major constraint and where environmental regulation is typically less demanding. MAHLE expects that by 2035, the share of BEVs and fuel cell electric vehicles (FCEVs) will increase further to approximately 50%, while the share of ICEs will decline to only around 30%, and plug-in and fuel cell electric vehicles forming the remaining 20%.

To address the challenge of electrification, MAHLE has established a dual strategy to (i) strengthen its position in the area of ICE-related technologies and (ii) develop future technologies, which are used in BEV, hybrid electric vehicles and also fuel cell vehicles. This strategy includes R&D spending into growing products like oil management modules for hybrid vehicles, on-board chargers for BEVs and humidifiers for fuel cell vehicles. As a result of the development of these new technologies, MAHLE aims to gradually reduce its dependency on ICE-related light vehicle sales gradually towards 25% in 2030. On a divisional basis, this will lead to declining contributions of Engine Systems and Components, while Electronics and Mechatronics will compensate the gap. The latter will result

in a substantially higher content per vehicle for plug-in hybrid electric vehicles and for BEVs, compared to a conventional ICE powered vehicle.

Relatively low margins, given a highly competitive sector environment

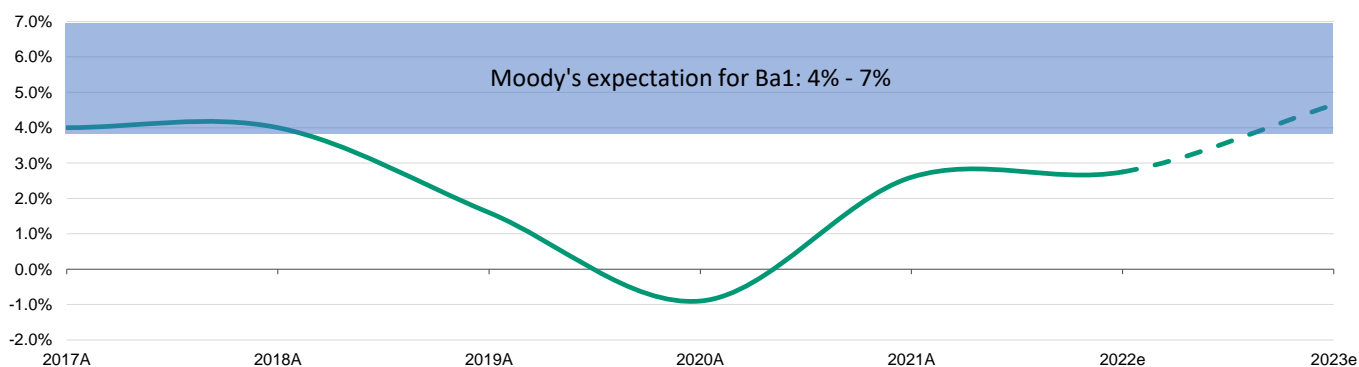
MAHLE's operating profit margins (Moody's adjusted EBITA) amounted to around 4% during 2016-18, a relatively low level, which is illustrative of the highly competitive automotive industry environment, and high investments (R&D and capex) needed to manage the automotive industry transformation, especially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

In 2019, MAHLE's margin dropped to only 2% and 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%. With a continued recovery of volumes and additional restructuring measures, however, we expect MAHLE's margins to reach a minimum of 4% from 2023, at the latest.

Exhibit 6

MAHLE's EBITA margins have suffered from the pandemic and are expected to recover gradually



Source: Company data, Moody's estimates

Conservative financial policy

MAHLE has established a track record of relatively low financial leverage metrics (below 3x during the years 2016-18), good liquidity and modest shareholder distributions. At the end of December 2021, MAHLE's debt (Moody's adjusted, including pension provisions) amounted to €3.2 billion, which leads to a debt/EBITDA (Moody's adjusted) of 4.1x. In 2021, MAHLE issued €750 million of senior unsecured bonds to pre-finance a €500 million bond maturity in May 2022. Excluding the pre-financing, MAHLE's debt / EBITDA was at 3.5x, still above the maximum of 3.0x, which Moody's expects for the Ba1.

We consider MAHLE's financial policy, which includes a declared net debt/EBITDA target of below 2x (company defined), as well as very low shareholder distributions to the MAHLE Foundation as conservative.

Since 2014, MAHLE has made several tuck-in acquisitions, including the acquisition of Letrika (2014, €242m sales), Delphi Thermal (2015, €1,066m sales) and Keihin Air Conditioning (2021, €234m sales). All other acquisitions had sales of less than €100 million. The acquisitions were focused on expanding MAHLE's product offering and enhance its technological expertise as well as its global footprint. MAHLE also entered into several Joint Ventures, which save investment spending. Given MAHLE's ownership structure, all acquisitions need to be funded with cash or additional debt. During 2016-19, MAHLE spent a total of slightly less than €300 million for acquisitions. With its, we consider MAHLE's M&A strategy as conservative, with the risk of larger debt-funded acquisitions being relatively small.

ESG considerations

Environmental, social and governance (ESG) risks are relevant and have been reflected in MAHLE's ratings. Environmental risks for automotive parts suppliers are moderate, according to our [environmental heatmap](#), published February 2022. This includes carbon transition risks in the automotive industry, which is gradually transiting to battery electric vehicles, driven by stricter environmental regulation. As a result, conventional internal combustion engines and related technologies are losing market share. With around 40% of its revenues coming from ICE technologies for light vehicles, MAHLE is exposed to high carbon transition risks. 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.

MAHLE's social risk exposure is moderate, in line with the overall automotive parts suppliers sector, according to our [social heatmap](#), published February 2022. In terms of human capital, we note that around two thirds of its 42k employees (2019) 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.

MAHLE's governance risks are moderate. The company has a prudent financial strategy and risk management in place, 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 is a positive from a governance perspective, because it 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, with the six management board members having in excess of 15 years of industry experience on average. The company's management's credibility and track record has, however, suffered from recent fluctuation at the CEO level. 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.

Liquidity analysis

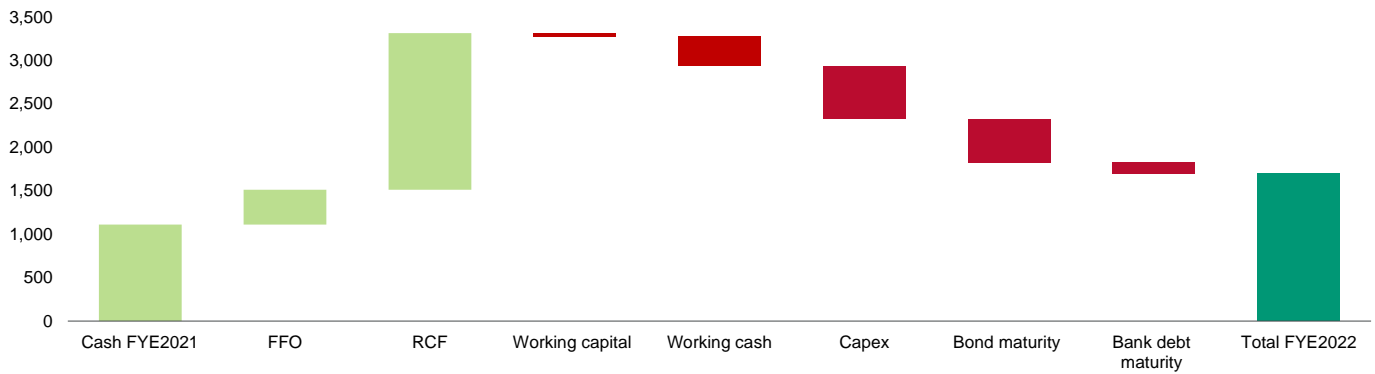
Moody's considers MAHLE's liquidity position to be good. The company's main sources of liquidity include (1) cash on the balance sheet of €1.1 billion (as of December 2021, excluding restricted cash) and (2) Moody's estimate of annual funds from operations of around €400 million. The company also has a €1.8 billion revolving credit facility (RCF) maturing in 2024 (€0.3 billion) and 2025 (€1.5 billion), which is undrawn. With this, MAHLE's liquidity sources over the next 12 months amount to approximately €3.3 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 Moody's expects at around €600 million, and a €634 million short-term debt maturities, including €500 million medium term notes maturing in May 2022. Uses of liquidity further include Moody's working cash assumption of €300 million.

Exhibit 7

MAHLE's liquidity is good

Liquidity sources and uses over the next four quarters to December 2021, according to Moody's liquidity stress case



Figures in € million

Source: Moody's calculation

Rating methodology and scorecard factors

The actual rating assigned of Ba1 is two notches above the scorecard-indicated outcome, based on financial metrics for the year ended 31 Dec 2021. 2021 margin, leverage and coverage metrics were, however, negatively impacted by non-recurring items, including restructuring expenses and adverse commodity prices.

Our 12-18-months forward-view leads to a two-notch higher scorecard-indicated outcome of Ba1, in line with the actual rating assigned. Overall, the methodology outcome is negatively impacted by MAHLE's very low EBITA margins, which are, however, expected to improve gradually.

Exhibit 8

Rating Factors

MAHLE GmbH

Automotive Supplier Industry Scorecard [1][2]			Current FY 12/31/2021		Moody's 12-18 Month Forward View As of 4/26/2022 [3]	
Factor	Measure	Score	Measure	Score	Measure	Score
Factor 1 : Scale (10%)						
a) Revenue (USD Billion)	\$12.25	Baa	\$12 - \$13	Baa		
Factor 2 : Business Profile (15%)						
a) Business Profile	Ba	Ba	Ba	Ba		
Factor 3 : Profitability and Efficiency (25%)						
a) EBITA Margin	2.6%	Caa	4% - 5%	Caa		
b) Expected Free Cash Flow Stability	Ba	Ba	Ba	Ba		
Factor 4 : Leverage and Coverage (30%)						
a) Debt / EBITDA	4.12x	B	2.5x - 3x	Ba		
b) EBITA / Interest Expense	2.7x	B	5x - 6x	Baa		
c) Retained Cash Flow / Net Debt	20.7%	Ba	30% - 35%	Baa		
Factor 5 : Financial Policy (20%)						
a) Financial Policy	Baa	Baa	Baa	Baa		
Rating:						
a) Scorecard-Indicated Outcome		Ba3		Ba1		
b) Actual Rating Assigned						Ba1

(1) All ratios are based on 'Adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-financial Corporations

(2) As of 12/31/2021, Source: Moody's Financial Metrics

(3) This represents Moody's forward view; not the view of the issuer; and unless otherwise noted in the text, does not incorporate significant acquisitions and divestitures

Source: Moody's Financial Metrics and Moody's Investors Service estimates

Ratings

Exhibit 9

Category	Moody's Rating
MAHLE GMBH	
Outlook	Negative
Corporate Family Rating	Ba1
Senior Unsecured -Dom Curr	Ba1

Source: Moody's Investors Service

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