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CREDIT OPINION
11 April 2023

Update

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RATINGS

Iochpe-Maxion S.A.

Domicile	Cruzeiro, Brazil
Long Term Rating	Ba3
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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Iochpe-Maxion S.A.

Update to credit analysis

Summary

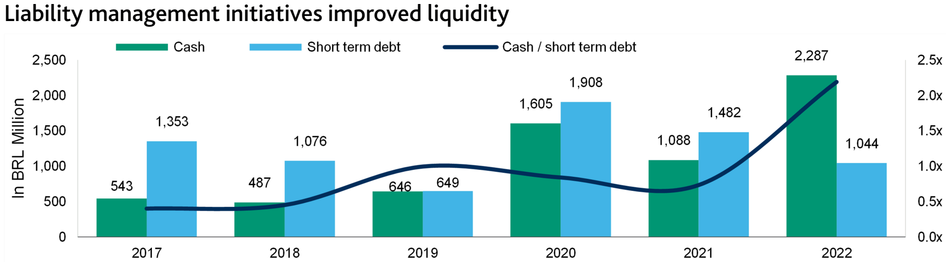
Iochpe-Maxion S.A.'s (Iochpe-Maxion) Ba3 ratings reflect the company's size, scale and position as a leading global supplier of steel and aluminum wheels for light and commercial vehicles, and as a major provider of structural components in the Americas; its good geographic diversification; and long-standing relationships with original equipment manufacturers (OEMs). The ratings also incorporates Iochpe-Maxion's adequate corporate governance standards, experienced management team and strengthened financial policies.

The company's adequate liquidity after several liability management initiatives carried out by the company since the beginning of 2021 also supports its rating, with its cash position covering all short-term debt maturities.

The rating also reflects Iochpe-Maxion's ability to expand its market share and its track record of robust revenue growth, even when the operating environment is difficult for the global automotive industry; and its adequate credit metrics, with Moody's-adjusted leverage ranging between 3.0x and 4.0x through economic cycles.

Iochpe-Maxion's ratings are constrained by its limited free cash flow (FCF) generation as a result of the industry's thin margins and capital intensity. Additional rating constraints include the company's history of growth through leveraged acquisitions, although it is likely to focus on organic growth in the next few years; and its exposure to the cyclicality of the automotive industry and the volatility in the prices of raw materials (steel and alumina). The company's exposure to a commoditized product offering and the bargaining power of large OEMs is also credit negative because it increases pricing pressure and limits margin expansion.

Exhibit 1
Liability management initiatives improved liquidity



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

Credit strengths

» Size and scale as a leading global supplier of wheels and structural components

» Good geographic diversification and long-standing relationships with OEMs

» Adequate corporate governance and strengthened financial policies

» Adequate liquidity after initiatives carried out since the beginning of 2021

» Adequate credit metrics

Credit challenges

» Exposure to the cyclicality of the automotive industry

» Commoditized product offering and volatility in the prices of raw materials

» Acquisitive growth history

Rating outlook

The stable rating outlook reflects our expectations that Iochpe-Maxion's profitability and leverage will remain adequate in the next 12-18 months despite potential market volatility; and that the company will prudently manage debt refinancing, capital spending and dividend distributions to preserve its liquidity.

Factors that could lead to an upgrade

Iochpe-Maxion's rating could be upgraded if its profitability improves, with adjusted leverage below 3.0x, and its interest coverage ratio (EBITA/interest expense) approaches 3.5x on a sustained basis. For an upgrade, Iochpe-Maxion would have to maintain adequate liquidity, with cash coverage of short-term debt above 1.0x on a sustained basis; and positive FCF generation, which would help the company withstand the volatility in its end markets.

Factors that could lead to a downgrade

Iochpe-Maxion's rating could be downgraded if its profitability deteriorates, with an EBITA margin below 8%, while its adjusted leverage is maintained above 4.0x and its FCF generation remains negative without any prospect of improvement. A deterioration in the company's liquidity could also lead to a rating downgrade. Weaker financial policies — reflected in funding concentrated in short-term facilities, a sizable debt-funded acquisition or a large shareholder distribution — would also strain the rating. Finally, an increase in the proportion of secured debt compared with unsecured debt would also lead to a downgrade of the rating of the unsecured notes.

Key indicators

Exhibit 2
Iochpe-Maxion S.A.

US Millions	Dec-17	Dec-18	Dec-19	Dec-20	Dec-21	LTM (Dec-22)	Forward view Next 12-18 months
Revenue	2,345.5	2,648.9	2,543.9	1,716.9	2,541.8	3,288.2	$3,600-3,700
EBITA Margin %	8.1%	7.6%	6.8%	0.4%	8.1%	7.6%	6.5 - 7.5%
Debt / EBITDA	3.7x	3.1x	3.3x	10.3x	3.7x	3.9x	3.0 - 4.0x
EBITA / Interest Expense	2.3x	3.2x	2.9x	0.1x	2.8x	1.8x	1.5-2.0x
RCF / Net Debt	15.2%	23.1%	21.9%	1.1%	16.1%	12.5%	20.0 - 25.0%

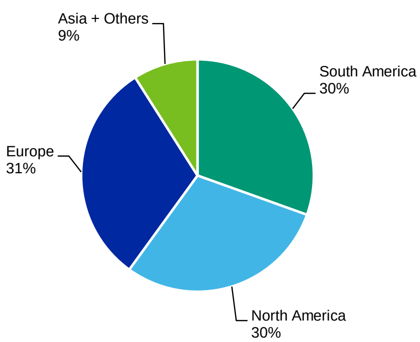
All figures and ratios are calculated using Moody's estimates and standard adjustments. Moody's forecasts (f) or projections (proj.) are Moody's opinion and do not represent the views of the issuer. Periods are financial year-end unless indicated. LTM = Last 12 months.
Sources: Moody's Financial Metrics™ and Moody's Investors Service estimates

Profile

Headquartered in Cruzeiro, Brazil, Iochpe-Maxion S.A. (Iochpe-Maxion) is the largest global producer of steel wheels for light and commercial vehicles, is among the top 10 global producers of aluminum wheels for light vehicles, and is a leading producer of side rails and chassis in the Americas. The company has 32 plants located in 14 countries in Europe, South America, North America, Asia and Africa, with a total production capacity of 62 million steel wheels and 17 million aluminum wheels a year.

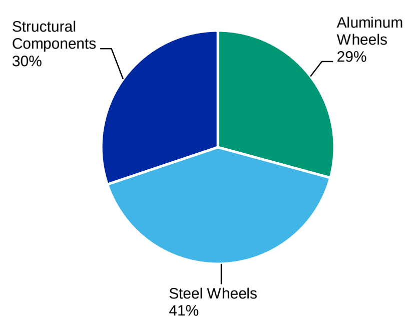
Iochpe-Maxion also has a 19.5% interest in an associated company that produces freight cars, railway wheels and castings, and industrial castings in Brazil. In 2022, the company generated BRL16.9 billion ($3.2 billion) in net revenue and BRL1.8 billion ($330 million) in EBITDA.

Exhibit 3
Net revenue by geography
2022



Source: Company

Exhibit 4
Net revenue by product
2022



Source: Company

Detailed credit considerations

Size and scale as a leading supplier of wheels globally and structural components in the Americas

Iochpe-Maxion is the largest global supplier of steel wheels for light and commercial vehicles, is among the top 10 global suppliers of aluminum wheels for light vehicles and is a major provider of structural components in the Americas. As of December 2022, the company had around 17% of the global market share for steel wheels for light vehicles, 15% for steel wheels for commercial vehicles and 3% for aluminum wheels for light vehicles. The company has a market share of 73% for side rails and 43% for chassis in Mercosur, and about 55% for side rails in North America.

Scale and market position are important determinants of business strength in the auto supplier industry because they usually reflect a company's ability to withstand the effects of changes in product demand, and its bargaining strength with customers and suppliers. In this context, the company is better positioned than its smaller competitors to withstand pricing pressure from OEMs, raw material price increases and technological changes. However, the company is not fully insulated from any of those risks.

Good geographic diversification and long-standing relationships with OEMs

Iochpe-Maxion's wide geographic footprint with 32 production sites in 14 different countries, located close to OEMs' facilities, helps reduce client transportation costs, which is a key competitive factor in this industry. The company has a geographically diversified revenue base, with 31% of total revenue coming from Europe, followed by North America (30%), South America (30%), and Asia and others (9%) in 2022, which reduces risks related to regional downturns in the automotive industry.

The company's long-standing relationships with OEMs, and its proven track record of timely and high-quality deliveries are credit positive. OEMs' wheel purchase orders take into consideration the auto supplier's engineering capability, quality, price and performance, making proven operational capabilities a differentiator during the customer's decision-making process. Engineering and performance tests for wheel programs increase switching costs for OEMs, mitigating business disruption risks. Finally, pass-through clauses for raw material price increases exist for both aluminum and steel wheels. In this context, Iochpe-Maxion's global relationships with OEMs facilitate negotiations and give the company an edge over smaller, regional competitors.

Commoditized product offering and volatility in the prices of raw materials

Around 74% of Iochpe-Maxion's revenue comes from sales of wheels for light and commercial vehicles, with particularly large exposure to steel wheels for light and commercial vehicles (41% of total revenue in 2022). Aluminum wheels represented 29% of total revenue, with the remaining 30% coming from the sale of structural components, such as chassis and side rails. The fierce competition and bargaining strength of OEMs increase pricing pressure in all of these segments and limit margin expansion for Iochpe-Maxion on a sustained basis. Furthermore, the company is exposed to the volatility in the prices of steel and alumina, two key raw materials in the production of wheels and structural components, and to potential changes in existing import tariffs in its key markets.

Steel wheels are facing competition from other technologies because OEMs are prioritizing lightweight aluminum wheels that support vehicles' performance and lower carbon emission. In mature markets, such as the US (Aaa stable), only 20% of light vehicles and light-duty trucks have steel wheels, compared with 50% in developing economies such as Brazil (Ba2 stable). However, steel wheels still represent a cheap solution for entry-level cars and spare wheels, and continue to offer greater resistance than aluminum wheels for commercial vehicles. Furthermore, the introduction of new technologies that reduce steel wheels' weight and new products that mix steel and aluminum will benefit the segment, potentially slowing the migration of steel wheels to aluminum wheels. The penetration rate of steel wheels in mature markets will remain close to the current levels in the next few years, providing some stability to Iochpe-Maxion's business model despite the pricing pressure.

China's large production capacity for aluminum wheels results in pricing pressure for this segment. Currently, Europe has anti-dumping measures in place to prevent increased imports from China. In Brazil, the end of Inovar-Auto incentive programme as of year-end 2017 removed the tax benefits for OEMs that used locally produced auto parts, but so far, there has been no significant increase in the import of auto parts because of the depreciation of the local currency. While we recognize that any change in the current regulation could strain Iochpe-Maxion's profitability, the company has competitive production costs that ensure the viability of its operations globally, even with fiercer competition from imports.

The volatility in the prices of Iochpe-Maxion's main raw materials, steel and alumina, is an additional credit negative. However, this volatility is an inherent risk for this industry. Raw materials represent around 63% of the company's total operating costs. Aluminum and steel prices have been highly volatile, with prices increasing significantly since the beginning of 2021. This volatility can lead to a temporary deterioration in Iochpe-Maxion's profitability, in case the company is not able to pass through price increases to OEMs in a timely manner, although we recognize the company's track record of margin stability coming from the existence of pass-through clauses with a maximum time lag of 90 days in contracts with OEMs.

Exposure to the cyclicality of the automotive industry

Iochpe-Maxion is exposed to the cyclicality of the automotive industry in its key markets such as Europe, the US and Brazil. Additionally, Iochpe-Maxion has a concentrated client base, with its five largest clients representing nearly 52% of revenue, which exposes the company to business disruption risks. We lowered our light vehicle sales growth estimates for 2022 to flat relative to 2021, and for 2023, we continue to expect a 5.3% growth, although from a lower base.

The revision was driven by a weakening macroeconomic environment and risks that affordability diminishes consumer demand. A higher cost of living (including for energy) not offset by salary increases, higher vehicle prices because of costlier production along the entire auto supply chain, and higher interest rates that make loans and leases less attractive for buyers all contributed to the revision as well. We expect stress on global supply chains to improve in 2023, but stay elevated. Shortages of parts, particularly microchips, eased but are not resolved; therefore, vehicle production has declined, which leads to low inventory and keeps auto prices high. We expect semiconductor supplies to the auto sector to improve in 2023 as the global macroeconomic environment weakens. Still, energy price escalation, or even physical shortages, should Russia cut off natural gas to Europe, add risk to auto production.

Through economic cycles, we expect Iochpe-Maxion to continue to outgrow the market based on market share expansion. However, we expect the company to remain exposed to regional downturns in the automotive industry, particularly in 2023, at its European operations as a result of the Russia-Ukraine conflict. The company's main operation in Europe is located in Turkey, where the company produces light vehicle wheels to export to other European markets. However, Iochpe-Maxion has heavy vehicle wheel operations in Germany and remains exposed to potential volatility in industrial output and sales in Europe in case of an escalation of the current conflict.

Credit metrics rebounded from pandemic slump

Iochpe-Maxion was able to improve its profitability and leverage consistently since 2015, even as the Brazilian automotive market deteriorated. The company's global footprint helps mitigate regional downturns in the automotive industry and reduces exposure to currency volatility.

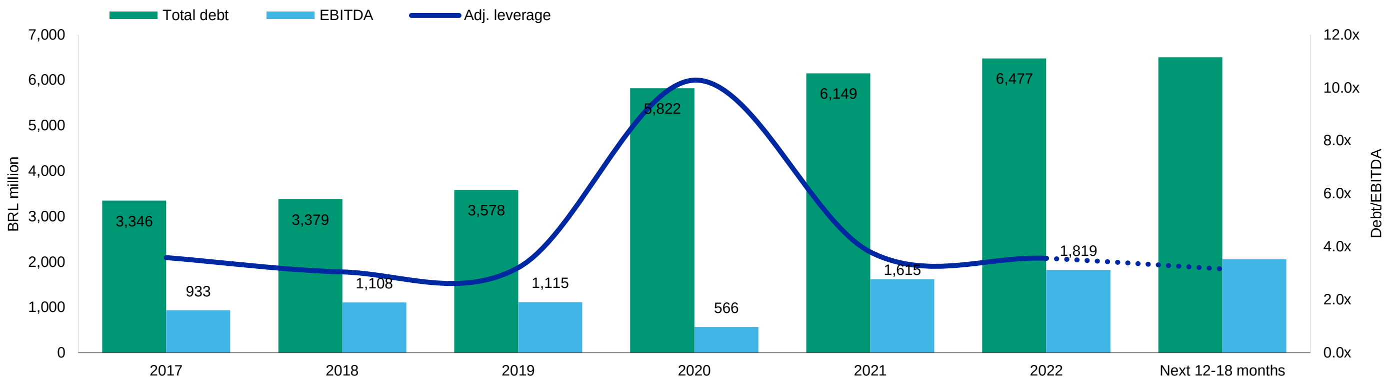
In 2020, the coronavirus pandemic led a number of automotive OEMs and commercial vehicle manufacturers and auto parts suppliers to temporarily close facilities, which significantly impaired sales volumes and profitability. In 2020, Iochpe-Maxion's total sales declined 13% from the level in 2019, weakened by the halt of OEMs' production during the first half of 2020. The company's profitability also declined because of less fixed-cost dilution and a less favorable sales mix, with a lower share of sales related to commercial vehicles. Accordingly, the company's Moody's-adjusted EBITDA declined to BRL566 million in 2020 (down 50% from the previous year) and its adjusted EBITDA margin closed at 6.5%, down from 11.1% in 2019. The decline in the company's revenue was lower than that in its sales volumes because of the sharp depreciation of the company's functional currency, the Brazilian real, and the translation of its sales into hard currencies.

In 2021, Iochpe-Maxion's revenue increased to BRL13.7 billion, which was above the pre-pandemic levels, while its EBITDA margin recovered to BRL1.6 billion despite the raw material price pressure. The improvement reflected the global rebound in automotive production despite the semiconductor shortage, market share gains with the ramp-up of a new plant in India and introduction of new products, and the company's strategy to prioritize sales to the less chip-intensive commercial vehicles. In 2022, Iochpe-Maxion's revenue increased further to BRL16.9 billion with the continued recovery in sales volumes, but profitability deteriorated slightly because of nonrecurring effects. Still, the company's EBITDA margin remained relatively stable at 10.2% in 2022, compared with 10.6% in 2021.

Higher EBITDA allowed Iochpe-Maxion's Moody's-adjusted gross leverage to remain stable at 3.9x in 2022, compared with 3.8x in 2021 and the 10.3x peak in 2020. The company also paid down around BRL500 million in debt during 2022.

Despite the volatility in the operating environment, we expect the company to maintain its conservative approach to leverage and liquidity during future crises, proactively adjusting costs, cash outflows and capital structure to reduce cash burn and liquidity risks. A longer-than-expected period of weak sales or a significant increase in liquidity risks would also strain the rating.

Exhibit 5
Improved operations and debt reduction supported leverage reduction
Moody's-adjusted metrics



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

ESG considerations

Iochpe-Maxion S.A.'s ESG Credit Impact Score is Moderately Negative CIS-3

Exhibit 6
ESG Credit Impact Score

CIS-3

Moderately Negative

NEGATIVE IMPACT POSITIVE IMPACT

For an issuer scored CIS-3 (Moderately Negative), its ESG attributes are overall considered as having a limited impact on the current rating, with greater potential for future negative impact over time. The negative influence of the overall ESG attributes on the rating is more pronounced compared to an issuer scored CIS-2.

Source: Moody's Investors Service

CIS-3 Iochpe-Maxion's ESG Credit Impact Score is moderately negative. Environmental risks relate directly to the declining trend for steel wheels and migration to aluminum wheels and other blended technologies as part of customers' ability to reduce vehicle weight and increase efficiency to meet increasing emissions regulations. However, lack of product substitution for wheels limits Iochpe-Maxion's exposure to the automotive electrification trends. Social risks incorporate managing customer relations, responsible production, and health and safety requirements. Governance aspects are incorporated in the rating, and include strengthened financial policies and our expectations of more conservative financial and liquidity management.

Exhibit 7
ESG Issuer Profile Scores

ENVIRONMENTAL	SOCIAL	GOVERNANCE
E-3	S-3	G-3
Moderately Negative	Moderately Negative	Moderately Negative

Source: Moody's Investors Service

Environmental

E-3 Iochpe-Maxion's environmental risks relate directly to customers' ability to reduce vehicle weight and increase efficiency to meet increasing emissions regulations. Steel wheels are facing competition from other technologies because OEMs are prioritizing lightweight aluminum wheels that support vehicles' performance and lower carbon emission. The penetration rate of steel wheels in mature markets will remain near the current levels over time and there is a lack of viable substitutes for wheels, which provide some stability to Iochpe-Maxion's business model despite the pricing pressure. The company has pledged that it will reduce its greenhouse gas emissions by 30% until December 2025, by 70% by December 2030 and by 100% by 2040.

Social

S-3 Iochpe-Maxion is exposed to risks related to customer relations, health and safety and responsible production given the nature of the manufacturing operations.

Governance

G-3 Iochpe-Maxion is a publicly traded company, with shares listed on the B3 stock exchange since 1984, currently as part of Novo Mercado, the level with the highest standards of corporate governance in Brazil. Its largest shareholder is the Ioschpe family with 14.6% of total shares, followed by Alaska Investimentos Ltda (10.8%), Vokin-VKN Administração de Recursos Ltda. (7.7%) and Fundo de Investimento em Ações WPA EST IE (7.2%); 1.4% are treasury shares. The remaining shares are freely traded in the market by domestic and international investors. The company's board of directors comprises nine members, of which four are members of the Ioschpe family. The company has audit, finance and compensation committees in place. The finance and compensation committees are composed of independent board members, while the audit committee has two members appointed by the company's board of directors and one independent member. The members of the Ioschpe family vote together based on a shareholders' agreement valid through 2023. There are no family members in the company's management team, which is composed of experienced professionals with many years of experience in the Brazilian and international markets. Currently, the company has formal financial policies regarding target leverage, dividend distribution and cash management, and is in the process of implementing policies related to minimum cash and cash coverage of short-term debt. The company's leverage target accommodates eventual M&A activity, but existing financial covenants limit the risk of any sizable debt-funded acquisition in the medium term. The company's bylaws have a poison pill, establishing that any shareholder acquiring or becoming a holder of 15% or more of Iochpe-Maxion's total shares has to make a public offering for the acquisition of all shares issued by the company, which limits risks related to change in control. Iochpe-Maxion's corporate governance standards are in line with those of other public companies in Brazil listed under B3's Novo Mercado, but could improve with the continued implementation of more conservative liquidity policies. The balanced risks and improvements in corporate governance, including the significant improvement in the company's financial policies and liquidity since the beginning of 2021, are incorporated into the rating.

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

Iochpe-Maxion's liquidity has improved since the beginning of 2020, reflecting several initiatives carried out by the company to improve its debt amortization schedule. Iochpe-Maxion has raised BRL850 million in new short-term credit lines to mitigate potential liquidity squeezes during the pandemic; replaced BRL940 million in short-term and medium-term debt by a new line from Banco Nac. Desenv. Economico e Social - BNDES (Ba2 stable) and Banco de Desenvolvimento de Minas Gerais S.A. (B2 stable) with two years of grace period and final maturity in 2027; issued $400 million in sustainability-linked notes with maturity in 2028 to repay upcoming debt maturities; used cash to pay down short-term debt; announced a BRL750 million debenture issuance, which was used to refinance debt maturities; and entered a BRL500 million revolving credit facility.

The company's cash position of BRL2.3 billion as of year-end 2022 is sufficient to cover all short-term debt maturities by 2.2x, and the company still has a BRL620 million availability under an undrawn credit line with BNDES. Iochpe-Maxion continues to work on additional refinancing initiatives to lengthen its debt amortization schedule further.

Although we expect Iochpe-Maxion to generate positive FCF in the next few years, its internal cash generation will remain limited by the industry's thin margins and capital intensity. We estimate that the company will likely have to invest around 30% of EBITDA in capital spending annually to maintain its operations and meet the growing demand for aluminum wheels in the upcoming years, after the company concluded its expansion in India and investments in China, which started to ramp up in H2 2022. While necessary to maintain its current market position, these investments will consume most of the company's cash flow from operations (CFO). Before the pandemic, in 2018-19, Iochpe-Maxion generated CFO of BRL650 million-BRL700 million, which was mainly directed toward expansion investments and dividend payments, resulting in muted FCF during this period. Without production shocks in 2023, the company is likely to return to positive FCF generation of about BRL100 million a year.

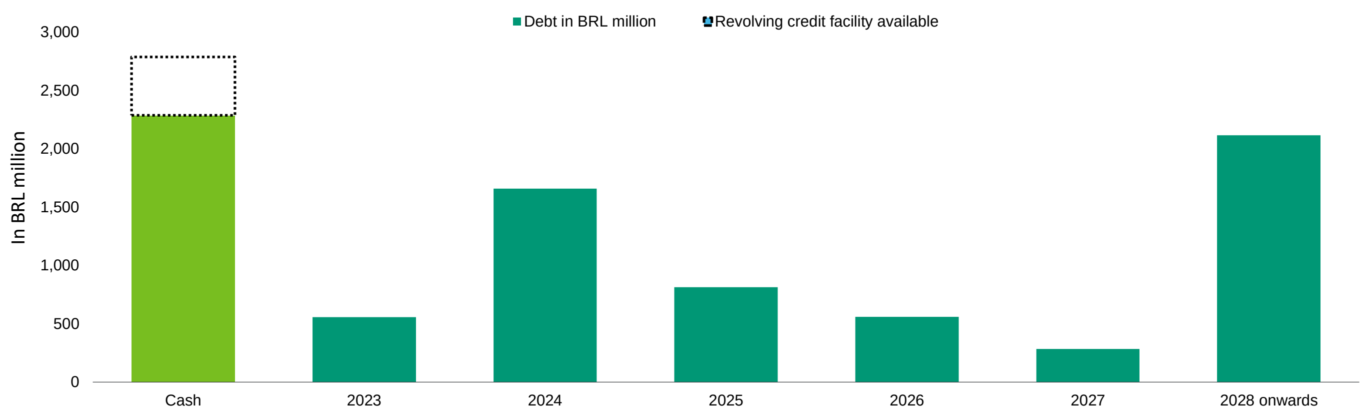
The company's bylaws have established a dividend payout of 37% of net income, above the 25% payout required by Brazilian laws. For 2022, Iochpe-Maxion announced dividend distributions of BRL105 million. Iochpe-Maxion is also required to pay 50% of net income from its joint venture in Turkey, which represents a cash outflow of about BRL100 million per year. Although these dividend distributions did not strain its liquidity, they have prevented a larger debt reduction over the past few years and the consequent improvement in the company's liquidity.

Historically, Iochpe-Maxion has maintained an adequate buffer under financial covenants applicable to part of its total outstanding debt, setting a maximum reported net leverage of 3.5x measured semiannually. However, the pandemic-induced economic shock forced the company to ask for a waiver from creditors to suspend the measure of the covenants in June and December 2020. In March 2021, Iochpe-Maxion renegotiated with debenture holders the measure of the covenants for June and December 2021 to eliminate risks related to debt acceleration during 2021.

Iochpe-Maxion grew through leveraged acquisitions, and although we expect the company's focus to be on organic growth in the next few years, we see risks related to additional debt-funded acquisitions in the long term, when the company is able to improve its balance sheet further.

Exhibit 8

Debt amortization schedule



Sources: Company and Moody's Investors Service

Methodology and scorecard

Iochpe-Maxion's scorecard-indicated rating under our global Automotive Supplier Industry rating methodology (published in May 2021) maps to Ba3, in line with the rating currently assigned to the company. The scorecard-indicated rating primarily reflects the strong recovery in credit metrics after the pandemic. Our 12-18-month forward-looking scorecard-indicated rating maps to Ba3, reflecting our expectation that profitability and leverage will remain adequate despite potential market volatility, with liquidity prudently managed by the company.

Exhibit 9

Rating factors

Iochpe-Maxion S.A.

Methodology: Automotive Supplier published on 31 Dec 2022	Current LTM (Dec-22)		Moody's Forward View Next 12-18 months (as of Mar-23)	
Factor 1: SCALE (10%)	**Measure**	**Score**	**Measure**	**Score**
a) Revenue (USD Billion)	$3.3	B	$3.6 - 3.7	B
Factor 2: BUSINESS PROFILE (15%)				
a) Business Profile	Ba	Ba	Ba	Ba
Factor 3: PROFITABILITY AND EFFICIENCY (25%)				
a) EBITA Margin	7.6%	B	6.5% - 7.0%	B
b) Expected Free Cash Flow Stability	Ba	Ba	Ba	Ba
Factor 4: LEVERAGE AND COVERAGE (30%)				
a) Debt / EBITDA	3.9x	B	3.0 - 3.5x	Ba
b) EBITA / Interest Expense	1.8x	B	1.6x - 1.8x	B
c) Retained Cash Flow / Net Debt	12.5%	B	22 - 26%	Ba
Factor 5: FINANCIAL POLICY (20%)				
a) Financial Policy	Ba	Ba	Ba	Ba
Rating Outcome:				
a) Scorecard-Indicated Rating		Ba3		Ba3
b) Actual Rating Assigned		Ba3		

[1] All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 12/31/2022.
[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™

Ratings

Exhibit 10

Category	Moody's Rating
IOCHPE-MAXION S.A.	
Outlook	Stable
Corporate Family Rating	Ba3
IOCHPE-MAXION AUSTRIA GMBH	
Outlook	Stable
Bkd Senior Unsecured	Ba3

Source: Moody's Investors Service

Appendix

Exhibit 11

Peer comparison

(in US millions)	Iochpe-Maxion S.A. Ba3 Stable FYE Dec-20	FYE Dec-21	FYE Dec-22	Nemak, S.A.B. de C.V. Ba1 Stable FYE Dec-20	FYE Dec-21	FYE Dec-22	Superior Industries Internat B2 Stable FYE Dec-20	FYE Dec-21	FYE Dec-22
Revenue	$1,717	$2,542	$3,288	$3,108	$3,802	$4,671	$1,101	$1,385	$1,640
EBITDA	$111	$305	$340	$414	$504	$494	$115	$160	$199
Total Debt	$1,121	$1,086	$1,290	$1,727	$1,660	$1,717	$775	$748	$751
Cash & Cash Equiv.	$309	$195	$433	$438	$283	$414	$152	$113	$213
EBITA Margin	0.4%	8.1%	7.6%	4.9%	6.0%	3.7%	3.6%	6.1%	7.7%
EBITA / Int. Exp.	0.1x	2.8x	1.8x	1.9x	2.1x	2.2x	0.8x	1.8x	2.3x
Debt / EBITDA	10.3x	3.7x	3.9x	3.9x	3.3x	3.4x	6.7x	4.7x	3.8x
Net Debt / Net Cap	51.5%	52.3%	51.0%	43.9%	46.2%	41.6%	78.7%	82.5%	72.7%
RCF / Net Debt	1.1%	16.1%	12.5%	22.1%	27.0%	32.4%	8.5%	14.1%	21.7%

Source: Moody's Financial Metrics™

Exhibit 12

Moody's-adjusted debt breakdown

Iochpe-Maxion S.A.

(in US Millions)	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22
As Reported Debt	**857.2**	**726.0**	**761.1**	**985.8**	**993.2**	**1,226.8**
Pensions	127.0	121.5	128.3	135.1	93.2	62.8
Operating Leases	24.5	24.2	0.0	0.0	0.0	0.0
Moody's-Adjusted Debt	**1,008.6**	**871.7**	**889.3**	**1,120.9**	**1,086.4**	**1,289.6**

All figures are calculated using Moody's estimates and standard adjustments.
Source: Moody's Financial Metrics™

Exhibit 13

Moody's-adjusted EBITDA breakdown

Iochpe-Maxion S.A.

(in US Millions)	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22
As Reported EBITDA	**220.1**	**294.5**	**292.8**	**77.3**	**352.3**	**352.9**
Operating Leases	8.5	8.6	0.0	0.0	0.0	0.0
Unusual	57.3	-1.8	-15.7	33.7	-47.1	-12.4
Non-Standard Adjustments	6.3	4.0	6.1	0.0	-6.3	0.0
Moody's-Adjusted EBITDA	**292.1**	**305.3**	**283.2**	**111.0**	**298.9**	**340.5**

All figures are calculated using Moody's estimates and standard adjustments.
Source: Moody's Financial Metrics™

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