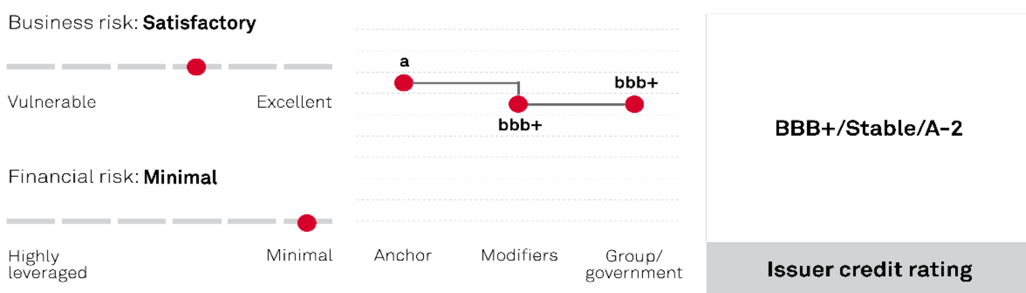
S&P Global
Ratings

Research

Volkswagen AG

February 20, 2024

Ratings Score Snapshot



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Credit Highlights

Overview

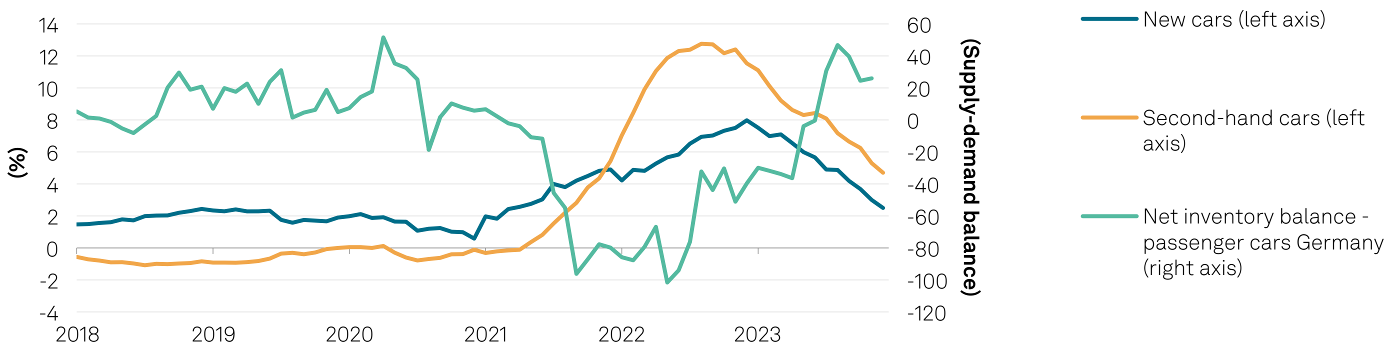
Key strengths	Key risks
No. 2 global automaker, with around 10% light vehicle (LV) market share in 2023, and leading positions in Europe (21% market share) and China (12%), and a top 10 position in the U.S. (4%).	Weaker net pricing amid sluggish economic growth and consumer sentiment is set to weigh on profitability and cash flow in 2024-2025.
Strong product breadth and diversity, ranging from volume to premium passenger cars, light and medium-to-heavy-duty commercial vehicles, can add earnings stability if all brands operate efficiently.	Very tough competition in China and intensifying competition for BEVs in Europe poses a challenge to long-term market share in its two largest markets.
Leader in the battery electric vehicle (BEV) market in Europe, with a share of about 21% (2023).	Cost efficiency and profitability of the LV volume brand portfolio remains structurally below peers and the group average.
Very strong balance sheet (0.2x debt-to-EBITDA expected for 2023), enabling funding investments in new vehicle platforms, software, battery cell supply, and mobility services.	Shareholder and governance structure could impede quick cost savings efforts and significant production footprint adjustments.
High degree of production and supply chain localization, with only about 10% of volume in top three markets being import sales.	High dependency on a few countries for the sourcing of nickel and cobalt, key battery materials.

Well-established captive finance operations support vehicle sales, with a penetration rate of 33.3% in the first nine months of 2023.

Pricing conditions are softening in key regional car markets as higher supply hits sluggish demand. We expect muted economic growth prospects and consumer sentiment, paired with tighter financing conditions, will curb customer demand for vehicles in 2024-2025, accompanied by a normalization in demand from corporate customers--a key driver for the post-pandemic auto market recovery. At the same time, the supply chain bottlenecks that plagued most of the industry over 2021 and 2022 have eased, leading to a more normalized vehicle supply balance. As a result, price growth for new and used cars has reduced (see chart below for the eurozone), and we expect net pricing deterioration for most original equipment manufacturers (OEMs) in 2024, and to some extent in 2025. More specifically, we assume a 10% decline in average transaction prices in the U.S. in the next two years (also including a mix component), a somewhat more moderate decline in Europe, and a continuation of fierce price competition in China. We also think affordability considerations may precipitate the change in pricing dynamics, as current price levels for many vehicles have reached historical peaks relative to household income. For example, relative to income, the price of Volkswagen AG (VW)'s Golf and Passat models has increased by 15%-20% over the last 20 years; a sizable share of this increase has occurred since 2019 (see second chart below).

Pricing conditions in Europe are normalizing

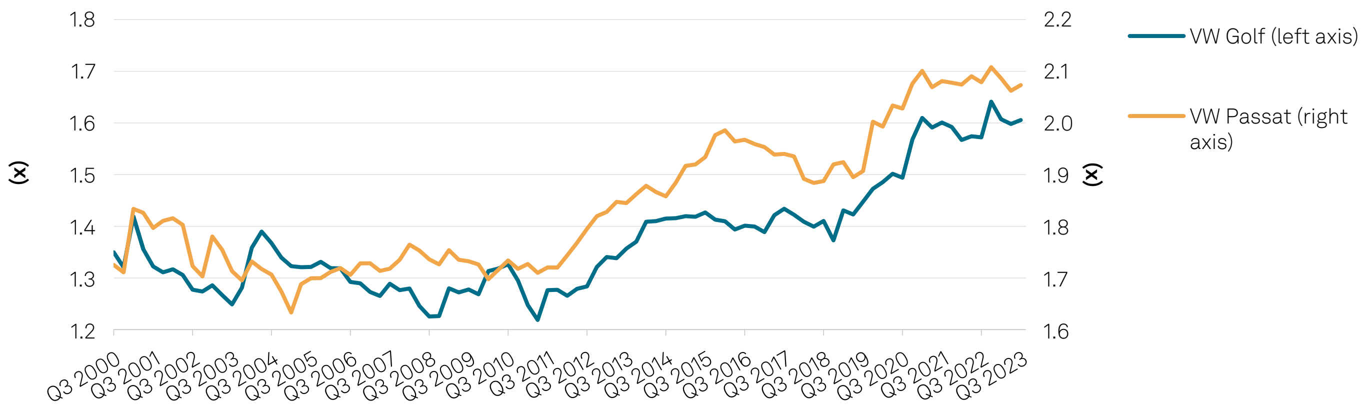
Eurozone car price indices (year on year) and net inventory balance passenger cars in Germany



Sources: Eurostat, Ifo, S&P Global Ratings.

European buyers have to pay more for a new vehicle

MSRP for a VW Golf and Passat/disposable income per capita (top 4 European markets)*



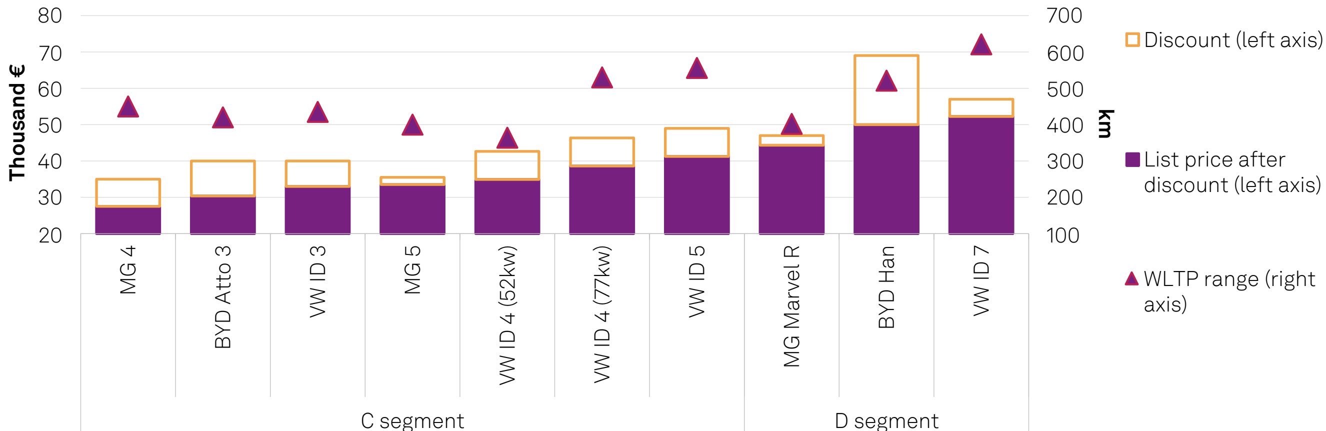
*Simple average of MSRP/disposable income per capita in France, Germany, Italy, Spain. LV- -Light vehicle. MSRP--Manufacturer's suggested retail price. Source: S&P Global Mobility, S&P Global Ratings.

Fierce competition and customer hesitation are amplifying pricing woes in the BEV segment. Following several years of rapid BEV penetration growth, consumer hesitation around BEV purchases is rising in the U.S. and Europe. This is because consumers are refusing the material mark-up for BEVs compared with internal combustion engine (ICE) models in these markets, which can easily exceed $10,000 compared with an equivalent non-BEV model in the same segment. This is compounded by concerns over range, charging infrastructure, or future residual values of BEVs and has recently contributed to much steeper discounts for BEVs, which is denting net pricing and margins.

Due to the multitude of BEV-only players, competition for these models is much more intense than for other powertrains. This is particularly apparent in China, where the average manufacturer suggested retail price (MSRP) for BEVs in some segments is lower than for ICE cars, and net pricing is further depressed by additional discounts. Recently, OEMs have been undertaking ferocious discounting activity in some European BEV markets, where softer demand coincides with the advent of model launches by Chinese OEMs and other BEV players. In markets like Germany, where this situation is compounded by the phase-out of BEV purchase subsidies, BEV price wars have started and discounts are often well in excess of 20%, for example in the C and D segment, forcing VW to follow suit with discounts on key models of its BEV portfolio (see chart below).

VW faces high competition for BEV discounts in parts of Europe

Price, discount, and WLTP range for BEVs in Germany (February 2024)

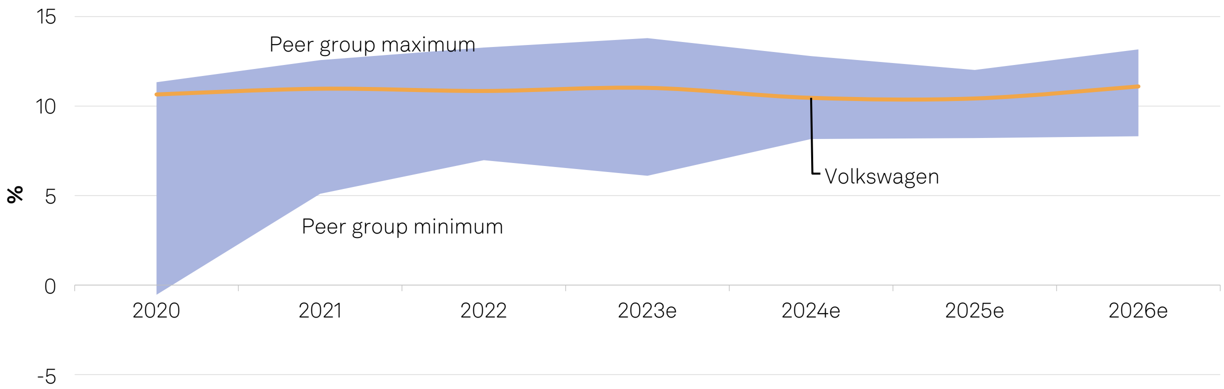


WLTP, discount, and list price for cheapest available model. Discount on Autoscout24 equals average of 5 cheapest models, discount from other sources is the lowest discount available. Source: ADAC, company websites, Carwow, Autoscout24, S&P Global Ratings.

We forecast VW will have a lower BEV share and modest volume growth in 2024 that will help contain some, but not all, of the challenges for margins. We believe pricing pressure for BEVs and normalizing net pricing for non-BEVs, as well as cost inflation on items such as labor, will lead to a decrease in VW's adjusted EBITDA margin by about 0.5 percentage points (pps) in 2024, after our estimate of 11.0% in 2023 and 10.8% in 2022. However, the effect of these factors on margins is partly cushioned by a lower BEV share in our forecast, modest volume growth outside of China, boosts from lower raw material costs, and ongoing cost savings. We cut our assumption for the share of BEVs in VW's light vehicle sales by about 3 pps to 11% for 2024 and 5 pps to 15% for 2025 compared with our November 2023 projections. There is a possibility that we could make further downward revisions, as we believe the company will adjust its BEV ramp-up to the current market conditions. As a result, we expect VW to maintain profitability in line with its global peer group and the thresholds for the rating (see chart below) despite near-term obstacles.

We expect VW's profitability to remain in line with peers'

EBITDA margin compared with peers over 2020-2026e

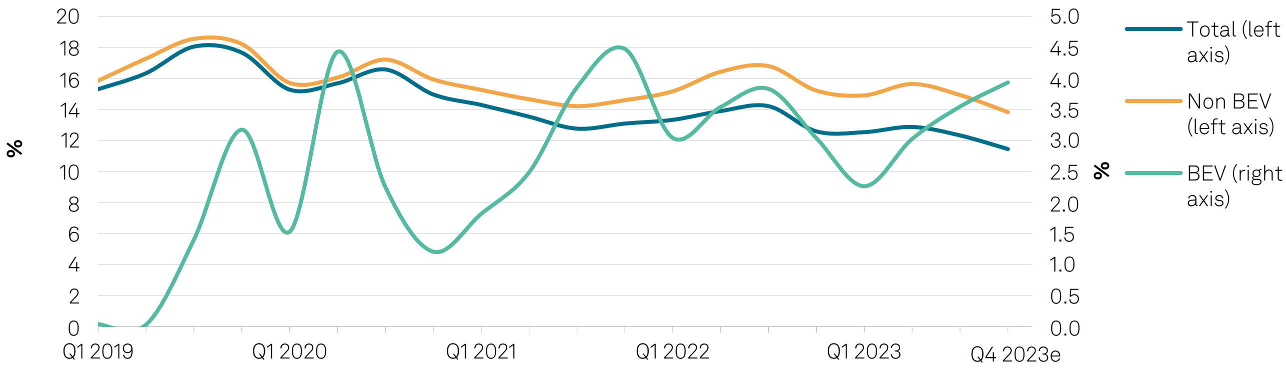


Peers include Stellantis, Ford, GM, Toyota, Hyundai, Kia, Honda and Renault. e--Estimate. Source: S&P Global Ratings.

VW's non-BEV market share decline in China has slowed. The company's total LV market share in China has dropped to below 13% in 2023 from more than 17% in 2019 (see chart). In our view, this is primarily due to VW's still weaker than peers' position in the growing BEV segment, where it currently holds about 4% market share. At the same time, its market share in the non-BEV segment has shown some resilience recently, remaining at or above 14% since mid-2021. Albeit from a low base, the company's BEV market share also improved from second-half 2023, partly aided by product refreshes to the VW ID.3, the group's top-seller in China in 2023, along with the VW ID.4, Audi Q4 e-tron, and VW ID.6. We expect VW will experience some further market share decline in China in the next two to three years, as, in our view, the company will avoid pushing BEV volumes too aggressively to contain pressure on profitability stemming from the intense competition in this segment.

The decline in VW's market share is due to increasing BEV popularity

Total, BEV, and non-BEV LV market share since Q1 2019

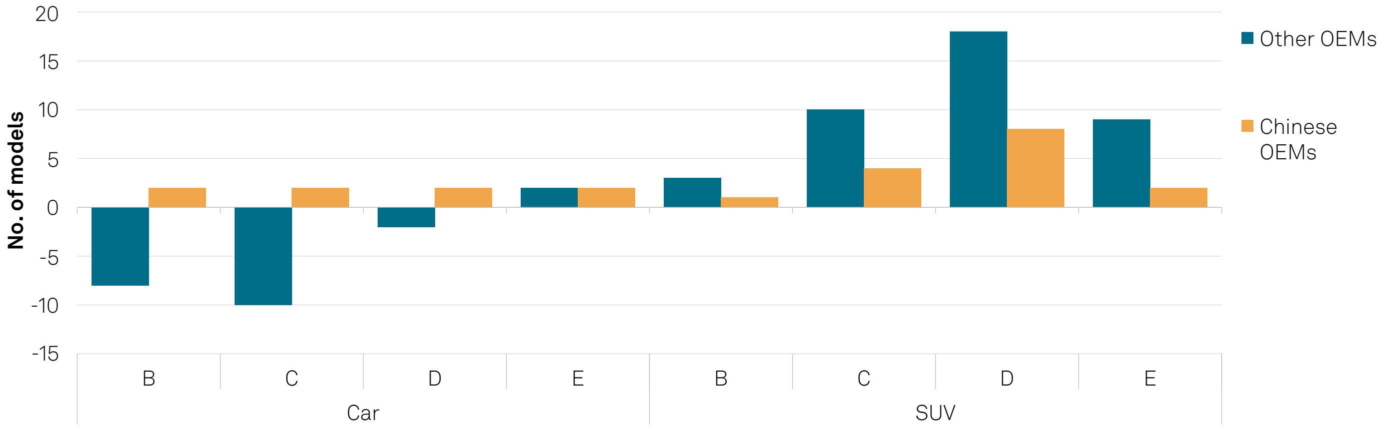


e--Estimate. BEV--Battery electric vehicle. LV--Light vehicle. Source: EV Volumes, S&P Global Mobility, S&P Global Ratings.

We expect competition from Chinese OEMs in Europe to further intensify. Against the backdrop of very intense competition in the local market and manufacturer suggested retail prices in key passenger car segments being about 60% higher in Europe than in China (cars and SUVs in the B, C, and D segments), we think it will remain compelling for Chinese OEMs to pursue diversification into Europe, even with potential future changes to tariffs or trade rules. Although confirmed additions to the model line-up currently focus on the C- and D-SUV segments (see chart below) and seem small relative to the size of the segment (counting more than 100 models in each C-SUV and D-SUV), we expect to see further model introductions over 2024–2025. This will be either from brands that have already launched in Europe and are expanding line-ups and geographical coverage, or potential newcomers. S&P Global Mobility research states that, in 2023, more than 25 Chinese brands had either launched sales in some European markets or were viewed as potential newcomers. We think this will reinforce VW's need to trim its cost structure as a hedge against more intense price competition, as well as maintain high research and development (R&D) spending to keep pace with innovation on digital, electric powertrain, and other vehicle features.

Chinese OEMs will target the SUV-C and SUV-D segments in Europe

Change in model count (2023-2027e)*

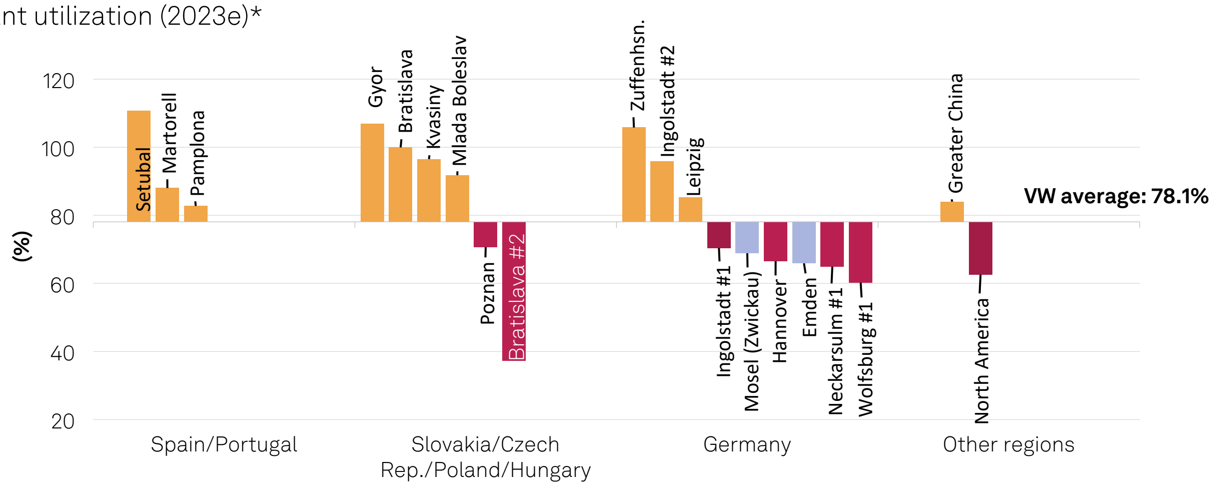


*Only confirmed models. Chinese original equipment manufacturers (OEMs) include BYD, SAIC, Dongfeng, NIO, Leapmotor, Xpeng. e--Estimate. Source: S&P Global Mobility, S&P Global Ratings

We think the successful implementation of the company's cost cutting program for the VW brand will be key to its competitiveness. In the first nine months of 2023, the operating margin of the VW brand stood at 3.4%, the lowest among the company's LV brands. VW has initiated a cost reduction program for the brand that aims to lift the operating margin to 6.5% by 2026, based on an array of measures including early retirement and voluntary leave schemes, savings on procurement, reduced product development and production time, etc. Moreover, in mid-2023, VW communicated plans to reduce capacity at its plants in Ingolstadt, Neckarsulm, and possibly Wolfsburg, which are among the plants in Europe with below average capacity utilization (see chart below, BEV-focused plants in light blue). We consider the outcome of these initiatives important for the rating, because we view a leaner cost structure as a crucial step for VW to be able to compete with a growing set of new players amid difficult economic conditions. In our view, additional restructuring measures, or a further consolidation of production footprint and the model portfolio, which currently features about 100 models and more than 1,500 model variants in major European markets, could be necessary.

Capacity utilization is lower in many of VW's German plants

Plant utilization (2023e)*

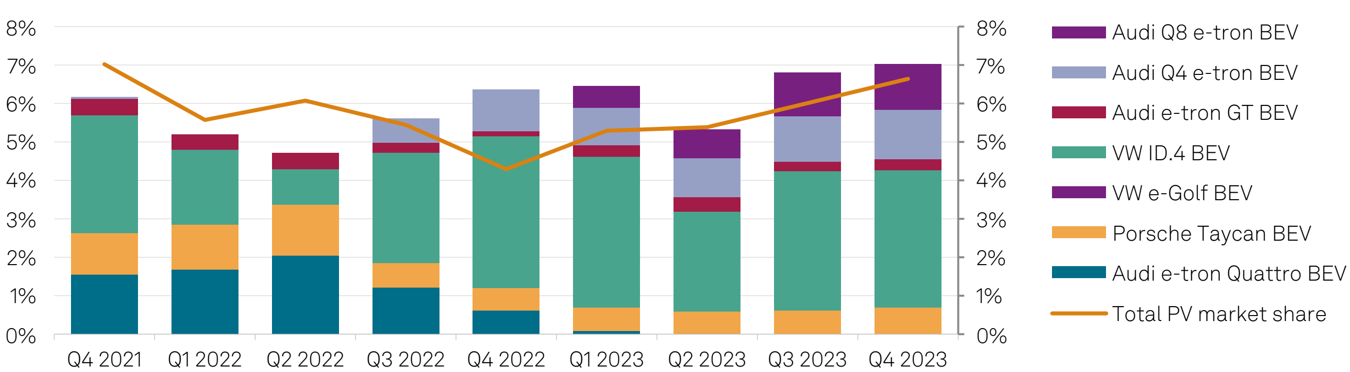


*Straight time capacity as defined by S&P Global Mobility. BEV-focused plants in light blue. Only plants >100,000 units. e--Estimate. Source: S&P Global Mobility, S&P Global Ratings.

VW is making some progress with its U.S. expansion. It took advantage of the increase in BEV penetration to modestly grow its market share in North America last year (see chart below), fueled by the locally assembled ID.4 model that is currently eligible for the maximum EV subsidy of $7,500 under the Inflation Reduction Act (IRA), as well as the Audi Q4 and Q8 e-tron models. In our view, further profitable diversification into the U.S. would be a credit positive, as it would allow VW to balance its regional exposure. However, this will likely require VW to invest in its regional supply chain for BEVs to expand its model portfolio eligible for IRA subsidies and invest in its non-BEV model line-up. We also anticipate competitive responses by incumbent players will make it difficult to achieve meaningful market share gains over a short timeframe.

VW's market share in North America is increasing

BEV and total PV market share in North America



BEV--Battery electric vehicle. PV--Passenger vehicle. Source: EV Volumes, S&P Global Ratings, S&P Global Mobility

Outlook

The stable outlook reflects our expectation that VW will make progress in key areas of its strategy and contain the financial impact of weaker economic conditions, increasing competition, and cost inflation. This should enable VW to achieve an S&P Global Ratings-adjusted EBITDA margin of 10%-12% and free operating cash flow (FOCF) to sales of at least 3%, while maintaining leverage below 0.5x.

Downside scenario

We could take a negative rating action if we observe missteps in the execution of VW's strategy for cost reduction, electrification, vehicle software development, autonomous driving, and mobility services, which, combined with more intense competition in its key markets in Europe and China, could lead to persisting pressure on market shares for battery electric vehicles (BEVs) or in other key segments. Alternatively, although we see comfortable headroom in the group's credit metrics, risks could mount if weaker pricing, increasing input costs, materially higher spending on acquisitions and partnerships, plus cash outflows for legal cases cause:

- A contraction in S&P Global Ratings-adjusted EBITDA margin to materially below 10% without prospects for swift recovery;
- FOCF to sales to fall below 3% for a prolonged period, with continued higher spending on joint ventures (JVs) and partnerships in key areas of VW's strategy; and
- Debt to EBITDA to approach 1.5x, or adjusted debt to capital (consolidated) exceeded 70% as a result of weaker operating performance.

Upside scenario

We could upgrade VW if it successfully strengthens its positions in key EV markets across its premium and volume brands, supported by a competitive model line-up and platforms, progress in vehicle software development, and development of its supply chain for battery cells and BEV components. This would help VW restore competitiveness in the Chinese BEV market, solidify its market position in Europe, and yield market share growth in the U.S. We would expect VW to achieve this without materially compromising profitability and while maintaining FOCF to sales of well above 3% with spending on JVs, partnerships, and mergers and acquisitions (M&A) in line with our base case, as well as debt to EBITDA below 1.5x and adjusted debt to capital (consolidated) well below 70%.

Our Base-Case Scenario

Assumptions

- Eurozone real GDP growth of 0.8% in 2024, then recovering to 1.5% in 2025, after our forecast of 0.6% for 2023, down from 3.3% in 2022 and 5.0% in 2021. In China, we expect real GDP growth of 4.6% in 2024, followed by 4.8% growth in 2025, after our forecast of 5.4% in 2023, 3.2% in 2022, and 8.1% in 2021. In the U.S., we expect real GDP growth of 1.5% in 2024, decelerating to 1.4% in 2025, after our forecast of 2.3% in 2023 and growth of 1.8% in 2022 and 5.7% in 2021.

- Annual growth in global LV sales of 1%-3% in 2024 and 2%-4% in 2025, a marked slowdown from about 9% in 2023, after a decline of about 2% in 2022 and 4% growth in 2021 (see "Industry Credit Outlook 2024," published Jan. 9, 2024).
- Adjusted revenue growth of about 14.0% in 2023, after 12.5% in 2022, mainly driven by volume growth in both LVs and trucks, and some remaining favorable pricing effects. This is followed by about flat topline in 2024 and about 1% growth in 2025, held back by a sharp deceleration in volume growth and moderately weaker net pricing.
- Higher volume and some remaining positive pricing effects explain the still-flat projected adjusted EBITDA margin for 2023 from 2022, despite a higher BEV share and higher inflation on various input cost items. We expect margins to decline from 2024 as pricing becomes challenging, and because lower costs for certain raw materials and efficiency measures do not fully offset cost inflation on labor and fixed costs and the increase in share of margin dilutive BEVs.
- Meaningful cash outflows from working capital in 2023 as inventory levels remain high due to a combination of logistics bottlenecks, volume growth, and cost inflation, followed by a reduction in 2024.
- R&D costs at 8.0%-8.5% of automotive revenue over 2023–2025 (8.1% in 2022), driven by investments in electrification and vehicle software, and tangible capital expenditure (capex) at 5.5%-6.0% of automotive revenue, compared with 5.5% in 2022, as VW spends on upgrading its production network for BEV production, future platform launches, and investments in battery cell production.
- The moderate decrease in dividend receipts from equity affiliates reflects our assumption of some earnings pressure on VW's JVs with SAIC Motor and FAW Group in China in the near term, because of the competitive conditions in this market.
- Total dividend payments of €11 billion-€12 billion in 2023 include a €6.7 billion cash outflow related to the special dividend in connection with the 2022 IPO of Porsche, as well as regular dividends, hybrid coupons, and dividends to the minority owners of Porsche.
- Annual spending on acquisitions and investments in JVs and partnerships, for example, for battery cell manufacturing, of about €5 billion annually in 2024–2025, after about €2.5 billion in 2023.

Key metrics

Volkswagen AG--Forecast summary

Period ending	Dec-31-2019	Dec-31-2020	Dec-31-2021	Dec-31-2022	Dec-31-2023	Dec-31-2024	Dec-31-2025	Dec-31-2026
(Mil. EUR)	2019a	2020a	2021a	2022a	2023e	2024f	2025f	2026f
LV sales (mil. units)	10.7	9.1	8.6	8.0	8.9	9.1	9.2	9.4
Share of BEVs in LV sales (%)	0.7	2.5	5.2	7.2	8.6	10.9	14.6	21.5
Battery cell volume sourced (GWh)	about 5	about 16	about 36	about 47	about 60	about 83	about 112	about 166
Revenue	212,472	182,106	209,194	235,375	268,642	267,771	270,027	273,777
EBITDA	25,832	19,399	22,952	25,532	29,608	28,017	28,157	30,390
Dividends from equity affiliates	3,786	3,195	2,960	2,781	2,500	2,250	2,000	2,250

Volkswagen AG--Forecast summary

Funds from operations (FFO)	20,972	14,358	19,089	21,340	24,418	23,425	23,777	25,500
Cash flow from working capital	333	1080	2409	(365)	(1,802)	1,082	(515)	(1,106)
Cash flow from operations (CFO)	25,494	17,893	24,194	19,686	24,216	25,931	24,808	25,977
Capital expenditure (capex)	13,939	11,000	10,419	12,553	14,411	15,680	15,275	14,945
Free operating cash flow (FOCF)	11,555	6,893	13,775	7,133	9,805	10,251	9,533	11,032
Dividends	2,899	2,662	2,734	4,084	11,606	5,578	4,648	4,680
Debt (reported)	196,065	198,034	203,957	198,800	208,800	219,800	230,800	240,800
Plus: Lease liabilities debt	6,210	6,124	6,245	6,385	6,385	6,385	6,385	6,385
Plus: Pension and other postretirement debt	32,361	34,779	31,949	22,710	22,710	22,710	22,710	22,710
Less: Accessible cash and liquid Investments	(30,236)	(38,388)	(39,565)	(51,903)	(48,340)	(46,901)	(46,924)	(48,414)
Plus/(less): hybrids, litigation, PSE debt, (captive finance debt)	(180,455)	(177,578)	(183,776)	(174,715)	(184,062)	(197,312)	(209,312)	(220,312)
Debt	23,946	22,971	18,811	1,278	5,494	4,683	3,660	1,170
Adjusted ratios								
Debt/EBITDA (x)	0.9	1.2	0.8	0.1	0.2	0.2	0.1	0.0
Annual revenue growth (%)	5.7	(14.3)	14.9	12.5	14.1	(0.3)	0.8	1.4
EBITDA margin (%)	12.2	10.7	11.0	10.8	11.0	10.5	10.4	11.1
FOCF/sales (%)	5.4	3.8	6.6	3.0	3.6	3.8	3.5	4.0
FOCF/sales, after M&A (%)	5.1	3.1	3.8	1.8	2.7	2.0	1.7	2.2
Captive debt/equity	6.1	5.8	5.2	4.6	4.0 - 6.0	4.0 - 6.0	4.0 - 6.0	4.0 - 6.0
Debt/debt and equity, consolidated (%)	64.7	64.0	60.7	53.3	52 - 56	52 - 56	52 - 56	52 - 56

All figures are adjusted by S&P Global Ratings, unless stated as reported. a--Actual. e--Estimate. f--Forecast. EUR--euro.

Company Description

Headquartered in Germany, VW is one of the world's leading auto manufacturers. During 2023, it delivered 9.2 million passenger cars and commercial vehicles, across the volume, premium, and luxury segments, including vehicles sold by unconsolidated JVs in China. Key brands include:

- Light vehicles: VW, Audi, Porsche, Skoda, SEAT/CUPRA, Bentley, Lamborghini, and VW Commercial Vehicles.
- Trucks and buses: Scania, MAN, Navistar, and VW Truck and Bus.

VW's key geographical markets are Europe and Asia-Pacific, together accounting for about 80% of total volumes in 2023. In 2022, the VW group reported revenue of €279.2 billion, of which €46.8 billion was from financial services.

Key shareholders include Porsche Automobil Holding SE, the holding company of the Porsche/Piech family (about 32% of shares and 53.3% of voting rights), Qatar Holding LLC (10.5% of shares and 17% of voting rights), and the State of Lower Saxony (11.8% of shares and 20% of voting rights).

Peer Comparison

We benchmark Volkswagen against Toyota and Stellantis for scale, as well as their prominent positions in the volume segment and their geographic reach. Compared to Toyota, VW manages a larger portfolio of brands across segments, and has diversified into trucks, whereas Toyota has not faced the pressure on its overall LV market share that VW has since 2021. Toyota and Stellantis enjoy stronger market positions in the U.S., but VW is a leading player in China, albeit facing strong competition from BYD and other local players. Stellantis displays higher S&P Global Ratings-adjusted profitability despite its smaller scale and share of premium/luxury LV sales, thanks to its very strong operating efficiency focus and synergies from the Peugeot-Fiat-Chrysler merger.

Relative to Tesla, VW exhibits larger scale and greater breadth and depth of model offerings across the entire range of LV segments and can count on extensive captive finance operations to support the sales and leasing of its vehicles. At the same time, Tesla is one of the global BEV market leaders and VW trails its market shares in this segment by a significant margin in all regions, except Europe. Moreover, VW's adjusted EBITDA margin and cash conversion is well below Tesla's. Tesla has also had its own proprietary battery cell technology for many years and is further ahead, in our view, with respect to the development of software-defined vehicle architectures.

Volkswagen AG--Peer Comparisons

	Volkswagen AG	Toyota Motor Corp.	Tesla Inc.	Stellantis N.V.	General Motors Co.
Foreign currency issuer credit rating	BBB+/Stable/A-2	A+/Stable/A-1+	BBB/Stable/--	BBB+/Stable/A-2	BBB/Stable/--
Local currency issuer credit rating	BBB+/Stable/A-2	A+/Stable/A-1+	BBB/Stable/--	BBB+/Stable/A-2	BBB/Stable/--
Period	Annual	Annual	Annual	Annual	Annual
Period ending	2022-12-31	2023-03-31	2023-12-31	2022-12-31	2022-12-31
Mil.	EUR	EUR	EUR	EUR	EUR
Revenue	235,375	237,802	87,550	178,945	134,714
EBITDA	25,532	26,864	14,948	23,752	13,646
Funds from operations (FFO)	21,340	17,871	13,645	19,796	12,384
Interest	2,108	397	318	1,356	969
Cash interest paid	631	129	291	1,126	918
Operating cash flow (OCF)	19,686	25,555	12,859	14,543	14,947
Capital expenditure	12,553	13,403	8,051	5,160	8,603
Free operating cash flow (FOCF)	7,133	12,151	4,808	9,383	6,344
Discretionary cash flow (DCF)	2,814	3,537	4,677	5,106	1,649
Cash and short-term investments	66,378	52,047	26,321	45,402	25,542
Gross available cash	55,903	76,906	26,321	44,304	25,542
Debt	1,278	0	0	0	3,063
Equity	128,876	170,787	57,547	65,160	53,590
EBITDA margin (%)	10.8	11.3	17.1	13.3	10.1
Return on capital (%)	10.7	13.3	18.6	32.7	12.1
EBITDA interest coverage (x)	12.1	67.7	47.0	17.5	14.1
FFO cash interest coverage (x)	34.8	140.0	47.9	18.6	14.5
Debt/EBITDA (x)	0.1	0.0	0.0	0.0	0.2
FFO/debt (%)	1670.5	NM	NM	NM	404.3
OCF/debt (%)	1540.9	NM	NM	NM	488.0
FOCF/debt (%)	558.3	NM	NM	NM	207.1

Volkswagen AG--Peer Comparisons

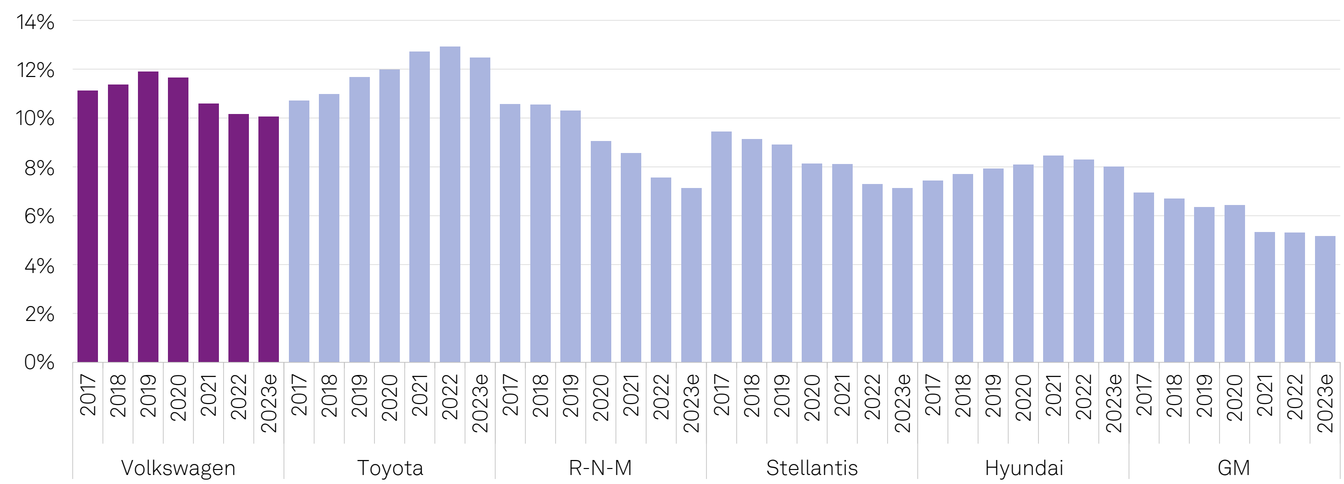
DCF/debt (%)	220.3	NM	NM	NM	53.8

Business Risk

VW enjoys an established position as the world's second-largest carmaker. Our view of VW's business risk factors in the group's position as one of the top two global carmakers, after Toyota, with total LV sales of 8.9 million in 2023. VW's global LV market share (based on S&P Global Mobility data) stabilized at about 10% in 2023 (see chart below), after declining from a peak of about 12% in 2019. This is partly because VW faced more pronounced supply chain difficulties than some peers during 2021-2022, and because it faces challenges around its market share in China. However, VW remains well ahead of other volume OEMs such as Stellantis, which has also ceded market share in the last few years, and Hyundai or General Motors. VW's main stronghold is in Europe, with market share of around 21% in 2023. The group retained the No. 1 position in China last year with a share of about 12%, ahead of BYD at 11%. For an OEM like VW that pursues high vertical integration and a lot of proprietary development, we think scale of operations is a supporting factor as investments can be recovered more easily through high volumes--provided synergies are realized across platforms and brands.

VW is the second-largest carmaker globally

Global LV market share for key original equipment manufacturers (2017-2023e)

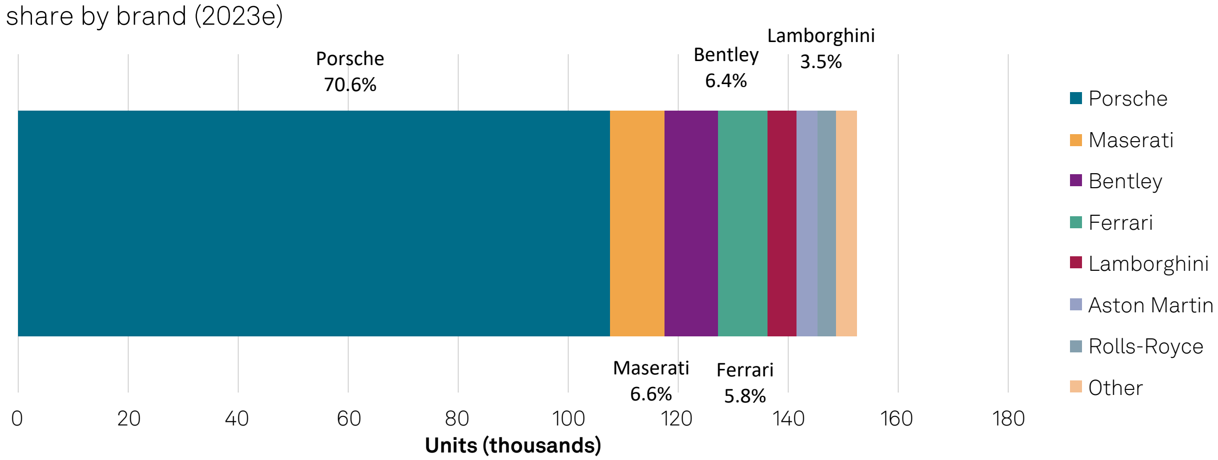


e--Estimate. LV--Light vehicle. Source: S&P Global Mobility, S&P Global Ratings

VW’s position in the premium and luxury car segments is accretive to margins and earnings resilience. VW is also the third-largest global premium and luxury car OEM, with an estimated market share of about 18% in 2023, after BMW (19%), and similar to Mercedes-Benz (18%), mainly based on its Audi and Porsche brands and small volumes of premium car sales under the VW brand. Furthermore, VW's Porsche, Bentley, and Lamborghini brands jointly dominate the global luxury and super luxury market (see chart below). We view the contribution from the premium and luxury segments to VW's sales as favorable thanks to their lower price elasticity and moderately better long-term growth prospects compared with other car segments.

VW brands dominate the global luxury market

Market share by brand (2023e)

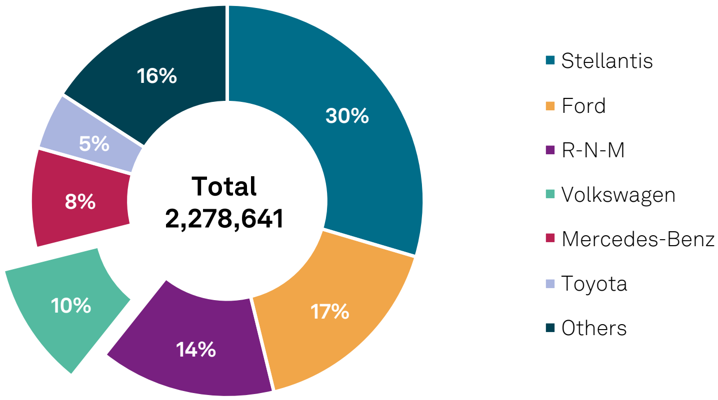


e--Estimate. Source: S&P Global Mobility, S&P Global Ratings

Positions in light commercial vehicles and trucks diversify VW's earnings base. VW is the fourth largest light commercial vehicle (LCV) OEM in Europe with an estimated market share of about 10% in 2023, behind Stellantis, Ford, and Renault-Nissan-Mitsubishi (see chart below). This is mainly based on VW's Caddy, Crafter, and Transporter models, which--combined--accounted for 78% of VW's European LCV sales last year. Medium and heavy-duty trucks and buses produced by its 90%-owned subsidiary, TRATON SE, further add to VW's portfolio diversity, accounting for 17% of the first nine months of 2023 automotive revenue (see our full analysis on TRATON SE , published Oct. 17, 2023, on RatingsDirect). However, prior to 2023, which was a year characterized by very benign truck market conditions, TRATON's profitability was below group average for many years, and its contribution to group earnings' stability hinges on continued operational improvements to reduce earnings cyclicality.

VW ranks No. 4 in the European LCV market

Market share by orignal equipment manufacturer (2023e)

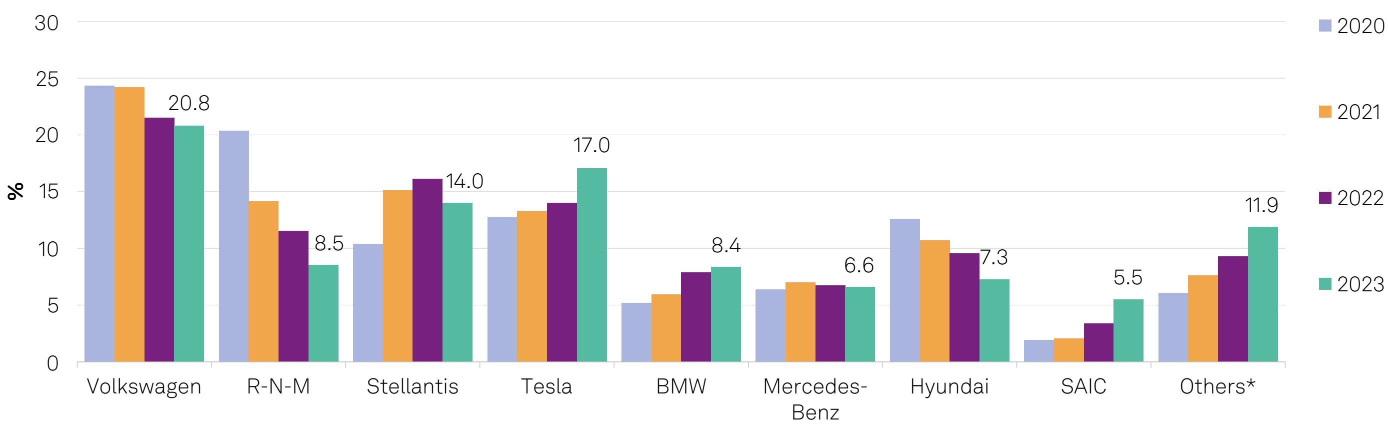


e--Estimate. LCV--Light commercial vehicle. Source: S&P Global Mobility, S&P Global Ratings

VW continues to lead the European BEV market. It held about 21% of the European BEV market in 2023 (see chart below), at about the same level as in 2022, reflecting the increasing breadth of its BEV lineup under most of its brands, with top sellers including the VW ID.4 and ID.5, Skoda Enyaq, and Audi Q4 e-tron (all SUV-C), VW ID.3 and CUPRA Born (Car-C), Audi Q8 e-tron (SUV-E), and Porsche Taycan (Car-E). That said, VW's lead on Tesla has narrowed (17% market share), and competition from BEV launches by other incumbent OEMs and BEV players pose a risk for VW's market share.

VW leads the BEV market in Europe

Market share by original equipment manufacturer

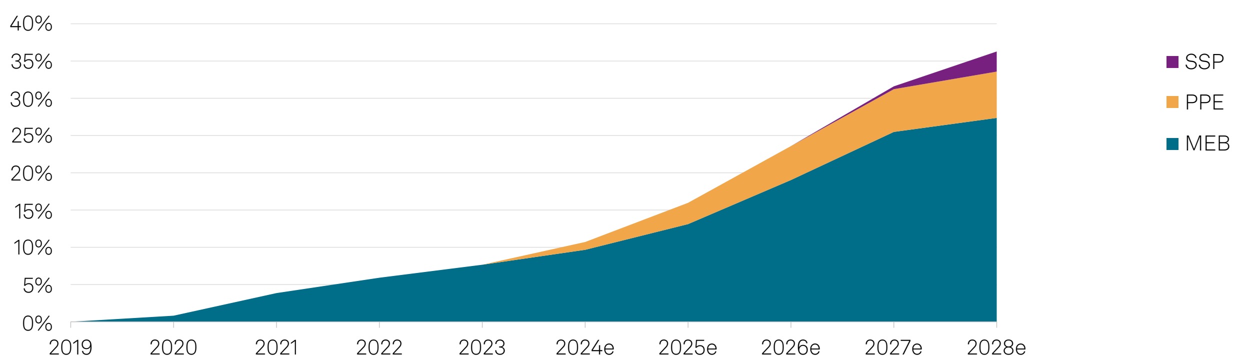


*Includes Geely-Volvo Car, Ford, and Toyota. BEV--Battery electric vehicle. Source: EV Volumes, S&P Global Ratings

Slower BEV ramp up in Europe may give VW time to work on its newer BEV platforms. Until 2023, VW's modular electric drive matrix (MEB) platform, which dates back to 2019, was the only dedicated LV BEV platform in series production, and, for example, underpinned the models of the ID family under the VW brand. Although complemented by the new premium platform electric platform from 2024 (Porsche e-Macan, Audi Q6 e-tron), MEB will likely remain the dominant BEV platform for the group for the foreseeable future, before the gradual ramp up of the scalable systems platform (SSP) from 2026 (see chart below). We think the late arrival of the SSP, which is set to deliver major advances in terms of powertrain, software, and other features, as well as variable costs, will make it harder for VW to compete on product features and pricing in the near term. However, our expectation of a more gradated increase in BEV penetration may, to some extent, temper the risk of a more material market share erosion in Europe, and could provide more flexibility to deliver a competitive SSP that meets market benchmarks when launched. Moreover, we expect VW to follow the evolution of BEV technology in the market in the meantime with regular refreshes of the MEB platform, such as with the introduction of MEB+ from 2025.

The bulk of VW's BEVs will be based on the MEB platform for some time

Share of production on dedicated BEV platforms

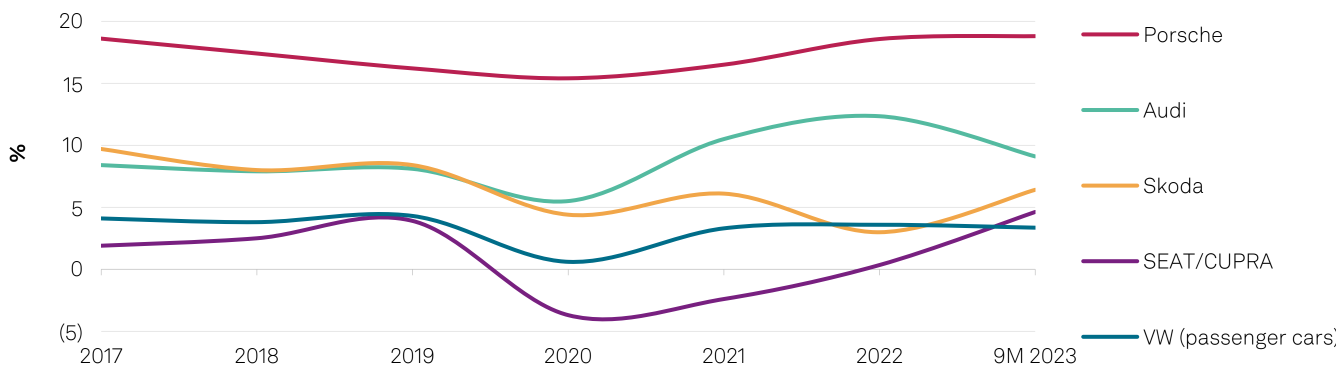


e- -Estimate. BEV- -Battery electric vehicle. MEB- -Modular electric drive matrix. Source: S&P Global Mobility, S&P Global Ratings

VW's volume brand profitability lags peers' and dilutes the group average. We consider this negatively from a credit perspective because it detracts from the diversification benefit of VW's extensive brand portfolio and leaves the group overly dependent on Porsche's earnings and cash flows, of which VW owns only 75%, and--to a lesser extent--Audi. Porsche usually contributes more than one-third of total operating income in the group's passenger car segment. Its reported operating margin of 15% and 20% (see chart below) has been several times higher than that of SEAT/CUPRA, Skoda, and Volkswagen Passenger Cars for many years. We think the sub-par profitability of VW passenger cars and SEAT/CUPRA underscores VW's difficulties in fully exploiting synergies across the group, inefficiencies in brands' own cost structures, factory under-utilization, and some overlap in brand positioning. That said, SEAT's operating margin has gradually improved since its trough in 2020 thanks to restructuring measures and the success of the CUPRA brand, and the company has launched an extensive cost optimization program for the VW brand to lift its operating margin to 6.5% by 2026.

VW's profitability heavily relies on Porsche and Audi

Operating margin by LV brand

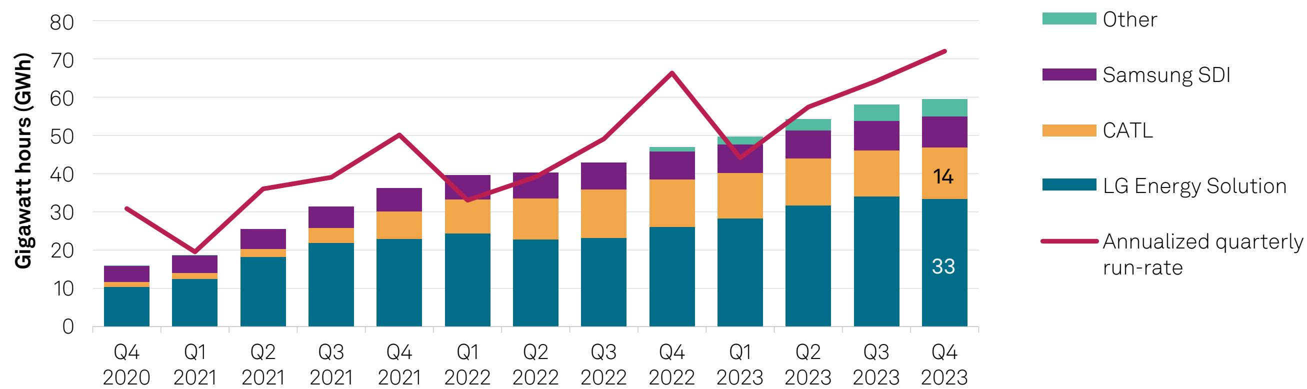


LV--Light vehicle. 9M--First nine months. Source: Company reports, S&P Global Ratings.

VW's battery cell and raw material supply chain ambitions require substantial investments but could yield medium-term benefits. We foresee VW's global demand for battery cells growing in lockstep with EV penetration, to about 110 gigawatt hours (GWh) by 2025 (based on an approximate 75%/25% BEV/PHEV split) from about 60 GWh in 2023 (see chart below). For Europe and North America, the key to sourcing these volumes will be VW's subsidiary PowerCo, which will develop, manufacture, and supply the group with EV batteries. PowerCo has so far announced concrete plans for three battery cell factories, and aims to cover about 50% of the company's estimated 450 GWh of required production capacity by 2030. PowerCo's factories will begin operations from 2025-2028 and will gradually replace volumes sourced through contractual agreements. Apart from the fully owned factory in Salzgitter, Germany, PowerCo will operate through partnerships and JVs. In China, VW is building a proprietary battery production plant in Anhui but relies on contractual sourcing partnerships to a greater extent than in the other regions. All-in-all, VW estimates its total investments for fully owned battery cell manufacturing or cell manufacturing partnerships at about €15 billion. We currently think VW's balance sheet will be able to handle these investments as they will be spread over many years. Moreover, we believe VW's greater vertical integration compared to other OEMs, combined with having standardized competitive proprietary battery cell technology produced at scale that is flexible to adapt to evolving cell chemistries, is likely to result in improved security of supply and potentially lower battery sourcing costs over time.

VW's appetite for battery cells is growing

Last-12-month battery cell demand by supplier (GWh)

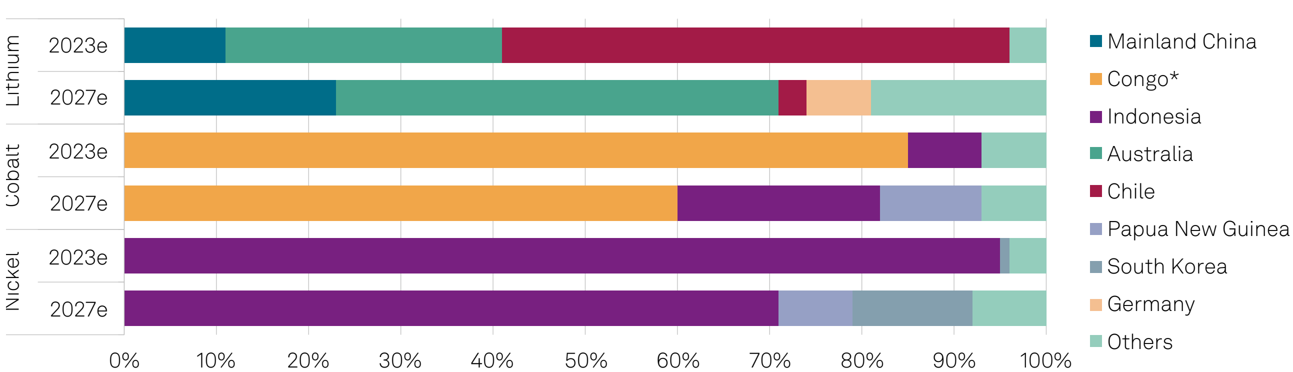


Source: EV Volumes, S&P Global Ratings

The supply of some raw materials for VW batteries is highly dependent on a few countries. Although common for the industry, this creates supply chain concentration risks. At this point, according to S&P Global Mobility, dependency is particularly high for cobalt, of which VW currently procures more than 80% from DR Congo, and nickel, which today is about 95% sourced from Indonesia (see chart below). We expect diversification to improve somewhat, but reliance on these two countries will remain high. For lithium, however, supply is more balanced, with a below-average share currently sourced from China. According to the company, VW has already secured its supply of key raw materials for about 30% of its 2030 needs through a variety of arrangements.

VW's reliance on a few sources for cobalt and nickel will remain high

Share of battery material sourced by country

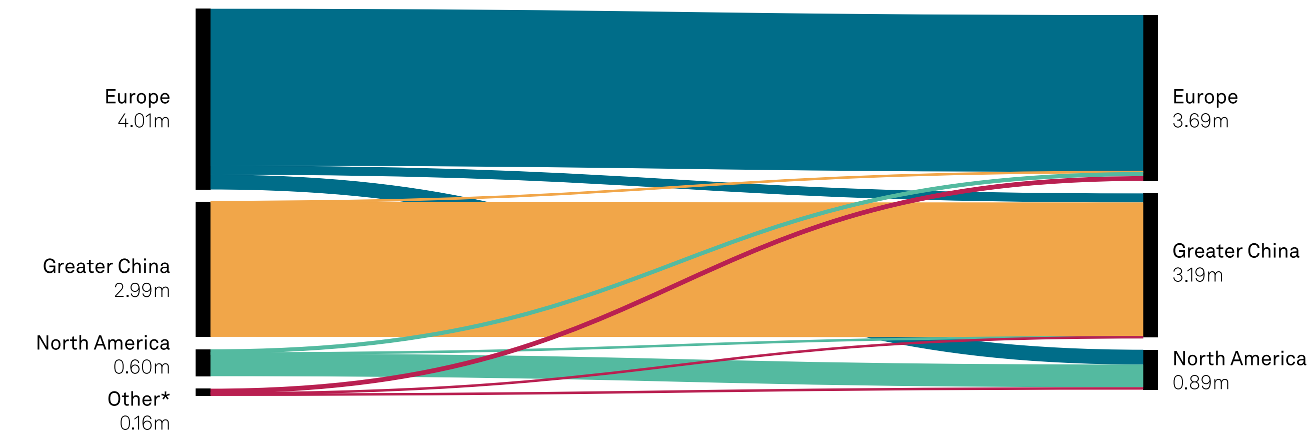


*Congo refers to Democratic Republic of Congo. E--Estimate. Source: S&P Global Mobility, S&P Global Ratings.

VW's high degree of localization offers some protection against geopolitical risks. In addition to macroeconomic ramifications, a deterioration in the political and trade relationships between the U.S. (most of the 11% share of North America in VW's total 2023 sales volume), China (35%), and Europe (41%) could spark a further rise in trade barriers in the form of tariffs, heightened local content requirements, or subsidies for domestic production. We think VW's exposure to these risks is lower than for most other OEMs thanks to its highly regionalized footprint, with only about 10% of its sales volumes in its top three markets stemming from imports, according to S&P Global Mobility (see chart below). We note, however, that import dependency is higher for the company's more profitable higher-end cars, which are less suited to localization given their limited sales volumes. For example, most of VW's imports into China are comprised of Porsche and larger Audi models (see second chart below).

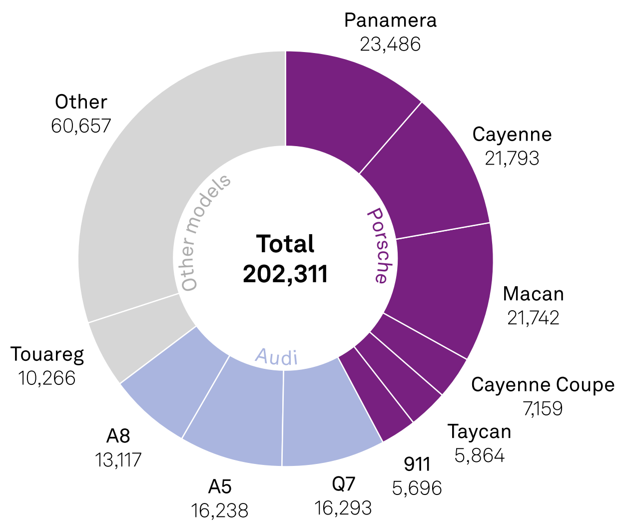
VW's light vehicle production is highly regionalized

Sales by production origin (2023e)



VW's imports into China mainly comprise Porsche and larger Audi models

By model (2023e)



*Comprises Middle East, South America, and South Asia. e--Estimate. Source: S&P Global Mobility, S&P Global Ratings.

Financial Risk

VW's strong balance sheet provides a cushion against industry obstacles and is firepower for investments. VW has steadily reduced leverage in the last few years, with our adjusted debt to EBITDA ratio decreasing to about 0.2x expected for 2023 from about 1.2x in 2020. This stems from ongoing leverage reduction through FOCF, underpinned by a predictable dividend policy targeting pay-outs of 30% of net income, a shrinking pension deficit, and more than €9 billion of retained net proceeds from the IPO and sale of about 25% of its subsidiary Porsche AG. We think this creates headroom for VW's balance sheet to absorb the tougher industry conditions ahead. Moreover, it provides VW with the flexibility to maintain high investments in key areas of its strategy, including EV technology and supply chain, charging, software and autonomous driving, or mobility services.

We expect JVs will drive a wedge between FOCF before and after M&A spending. We believe VW will pursue a sizable share of its strategic investments through partnerships and JVs. We assume spending of about €2.5 billion in our base case for 2023 and €5.0 billion annually over 2024-2025. Many of these JVs are unlikely to be consolidated but will target areas that are vital for VW's competitiveness and substitute for spending on R&D and capex. We therefore monitor FOCF generation more holistically, both including and excluding spending on acquisitions and participations. In highly material cases, we may proportionally consolidate partnerships such as JVs or equity affiliates if these are crucial to the implementation of VW's strategy and material for our credit metrics and comparability with peers. In our current base case, however, we are yet to do this for any JV or equity affiliate.

VW's captive finance operations remain well capitalized, providing headroom under our new criteria. Leverage in VW's captive finance operations, as measured by our criteria, has steadily decreased in the last few years, with our measure of debt to equity moving to below 5.0x in 2022 (5.4x as of Sept. 30, 2023) from 6.7x in 2015. Among other things, this has been helped by the recently sound earnings performance of the company's financial services entities. At the same time, we consider the credit quality of VW's loan and lease portfolios as strong, based on our average estimated net loss ratio in the last three years of below 0.5%. As a result, we assess VW's asset and leverage risk as low. Moreover, even with our expectation that debt to equity may increase somewhat in the next few years due to business growth in the captive subsidiaries, we expect the captive's leverage to remain well below the 10x upper limit for the asset and leverage risk category. We do not expect material changes to the captive's capitalization from the planned reorganization of VW's captive finance entities targeted for mid-2024. Consolidated leverage has also improved in recent years, supported by leverage reduction in the automotive business, a lower pension deficit, and financial services earnings. This is reflected in a reduction in our adjusted debt to capital (consolidated) to about 53% in 2022. We expect this ratio to remain between 52%-56% in the next three years.

VW has a record of successfully managing residual value (RV) risk in its growing leasing business. The share of operating leasing in net earning assets of VW's captive finance operations has steadily increased to about 30% in 2022 from 25% in 2016, and we expect it to grow by another 2-4 pps in the next three years. This is due to the company's strategy to promote alternative models for car usage (like subscriptions as opposed to traditional car purchases, for example) during the transition to EVs and to expand its offering in mobility services. Although this will likely add to VW's overall exposure to RV risk, we think it is mitigated by the company's comprehensive risk management processes and systems. In our view, VW relies on a sophisticated RV modelling and forecast process that combines quantitative modelling with other inputs and draws on data from many used car transactions, partly from platforms owned by the group. This has contributed to the good performance of RV predictions, with realized RVs typically not deviating more than 5 pps from VW's projections at contract inception for several years before the recent inflation in used car prices. We also believe the company's broad geographical reach helps VW take advantage of arbitrage opportunities in used car markets, which further improves its RV performance.

We expect that RVs for both BEV and ICE cars will be subject to higher volatility as the shift to alternative powertrains progresses in many markets and BEVs undergo rapid technological evolution, which increases obsolescence risks for earlier generation BEVs and ICE cars. That said, the shift in the powertrain mix of VW's leasing portfolio will occur gradually, and will be staggered, linked to its product launch schedule. Currently RVs for BEVs are deteriorating due to intense competition in this segment. Although this increases the risk of RV losses (taken in the form of higher depreciation or weaker remarketing results), we think the short-term effect will be contained by the so far limited share of BEVs in the portfolio (about 9% of 2023 LV sales). We therefore assess RV risk and our captive finance modifier as neutral to the rating, despite VW's leasing exposure exceeding 25%.

Our 10% EBITDA margin threshold for the rating reflects the effects of intra-group profit transfers, which are slightly beneficial for VW's S&P Global Ratings adjusted EBITDA margin. For our analytical adjustments, our criteria consider captive finance operations as activities that are external to the industrial business, and we seek to reflect all industrial revenue and profits in our adjusted credit metrics. Like some of its peers, VW eliminates the revenue and gross profit for certain sales of new vehicles from its automotive business to its financial services business (about €14.7 billion in 2022). This mainly concerns vehicles intended to be leased out to customers by the financial services division. The so eliminated industrial profit is returned over time to the automotive business, and this retransfer affects cost of sales but not revenue; more specifically, the financial service business records these vehicles at acquisition cost, while the group records them at manufacturing cost, and the difference in depreciation is a positive effect on automotive cost of sales as shown in VW's segment reporting. As per our estimates, this could imply a slight deviation in our adjusted EBITDA margin from our definition of industrial activity. We estimate that without these effects, our adjusted EBITDA margin could be 0.5–1.0 pps lower. This is why we maintain our threshold for an EBITDA margin of 10% for VW, incrementally higher than for peers with the same business risk assessment.

Debt maturities

As of Sept. 30, 2023, VW's debt maturities are as follows:

- Short-term financial debt: €104.1 billion (including €32.6 billion of deposits and €1.1 billion of lease liabilities).
- Long-term financial debt: €125.0 billion (including €2.6 billion of deposits and €5.0 billion of lease liabilities).

Volkswagen AG--Financial Summary

Period ending	Dec-31-2017	Dec-31-2018	Dec-31-2019	Dec-31-2020	Dec-31-2021	Dec-31-2022
Reporting period	2017a	2018a	2019a	2020a	2021a	2022a
Display currency (mil.)	EUR	EUR	EUR	EUR	EUR	EUR
Revenues	196,949	201,067	212,472	182,106	209,194	235,375
EBITDA	24,229	24,469	25,832	19,399	22,952	25,532
Funds from operations (FFO)	20,339	20,338	20,972	14,358	19,089	21,340

Volkswagen AG--Financial Summary

Interest expense	2,460	2,155	2,618	2,519	2,316	2,108
Cash interest paid	374	346	2,672	3,032	534	631
Operating cash flow (OCF)	7,049	14,027	25,494	17,893	24,194	19,686
Capital expenditure	12,548	13,157	13,939	11,000	10,419	12,553
Free operating cash flow (FOCF)	(5,499)	870	11,555	6,893	13,775	7,133
Discretionary cash flow (DCF)	(6,831)	(1,533)	8,656	4,231	9,970	2,814
Cash and short-term investments	34,396	46,018	42,692	55,071	62,255	66,378
Gross available cash	27,337	37,546	33,226	41,726	43,165	55,903
Debt	31,754	25,876	23,946	22,971	18,811	1,278
Common equity	75,538	81,958	85,811	87,625	101,090	128,876
Adjusted ratios						
EBITDA margin (%)	12.3	12.2	12.2	10.7	11.0	10.8
Return on capital (%)	13.5	12.8	14.3	7.3	9.1	10.7
EBITDA interest coverage (x)	9.8	11.4	9.9	7.7	9.9	12.1
FFO cash interest coverage (x)	55.3	59.9	8.8	5.7	36.7	34.8
Debt/EBITDA (x)	1.3	1.1	0.9	1.2	0.8	0.1
FFO/debt (%)	64.1	78.6	87.6	62.5	101.5	1,670.5
OCF/debt (%)	22.2	54.2	106.5	77.9	128.6	1,540.9
FOCF/debt (%)	(17.3)	3.4	48.3	30.0	73.2	558.3
DCF/debt (%)	(21.5)	(5.9)	36.1	18.4	53.0	220.3

Reconciliation Of Volkswagen AG Reported Amounts With S&P Global Adjusted Amounts (Mil. EUR)

	Debt	Shareholder Equity	Revenue	EBITDA	Operating income	Interest expense	S&PGR adjusted EBITDA	Operating cash flow	Dividends	Capital expenditure
Financial year	Dec-31-2022									
Company reported amounts	198,800	165,377	279,232	50,639	22,124	1,096	25,532	28,496	4,362	22,671
Cash taxes paid	-	-	-	-	-	-	(4,415)	-	-	-
Cash interest paid	-	-	-	-	-	-	(3,274)	-	-	-
Lease liabilities	6,385	-	-	-	-	-	-	-	-	-
Intermediate hybrids (equity)	7,061	(7,061)	-	-	-	288	(279)	(279)	(279)	-
Postretirement benefit obligations/ deferred compensation	22,710	-	-	22	22	546	-	-	-	-
Accessible cash and liquid investments	(51,903)	-	-	-	-	-	-	-	-	-
Capitalized interest	-	-	-	-	-	178	(178)	(178)	-	(178)
Capitalized development costs	-	-	-	(9,723)	(4,579)	-	-	(9,723)	-	(9,723)

Reconciliation Of Volkswagen AG Reported Amounts With S&P Global Adjusted Amounts (Mil. EUR)

	Debt	Shareholder Equity	Revenue	EBITDA	Operating income	Interest expense	S&PGR adjusted EBITDA	Operating cash flow	Dividends	Capital expenditure
Dividends from equity investments	-	-	-	2,781	-	-	-	-	-	-
Captive finance operations	(194,267)	(42,391)	(43,857)	(15,340)	(5,765)	-	3,954	1,369	-	(217)
Nonoperating income (expense)	-	-	-	-	3,720	-	-	-	-	-
Noncontrolling/ minority interest	-	12,950	-	-	-	-	-	-	-	-
Debt: Guarantees	1,200	-	-	-	-	-	-	-	-	-
Debt: Litigation	4,200	-	-	-	-	-	-	-	-	-
Debt: other	7,092	-	-	-	-	-	-	-	-	-
EBITDA - Gain/(loss) on disposals of PP&E	-	-	-	(403)	(403)	-	-	-	-	-
EBITDA: Derivatives	-	-	-	(1,800)	(1,800)	-	-	-	-	-
EBITDA: other	-	-	-	(644)	(644)	-	-	-	-	-
D&A: other	-	-	-	-	644	-	-	-	-	-
Total adjustments	(197,523)	(36,502)	(43,857)	(25,107)	(8,805)	1,012	(4,192)	(8,811)	(279)	(10,118)

S&P Global Ratings adjusted	Debt	Equity	Revenue	EBITDA	EBIT	Interest expense	Funds from Operations	Operating cash flow	Dividends	Capital expenditure
	1,278	128,876	235,375	25,532	13,319	2,108	21,340	19,686	4,084	12,553

Liquidity

Our short-term rating on VW is 'A-2'. As of Sept. 30, 2023, we assess the group's liquidity as strong because we expect liquidity sources to cover uses by slightly more than 2x in the next and the following 12 months. We do not assess liquidity as exceptional at this stage because we think the company may not be able to maintain its liquidity buffers such that its sources of liquidity exceed uses by more than 2x in weaker market conditions, or in case of higher-than-expected spending on acquisitions and participations. We perform our liquidity analysis for VW on a joint basis, which looks at industrial and captive operations in combination.

As of Sept. 30, 2023, our estimated net outflow from VW's portfolio run-off, portfolio reinvestment, and debt maturities can be broken down as follows:

- Gross portfolio run-off: Inflows from contractual repayments of loans and finance principal, as well as expected proceeds from the remarketing of leased assets, totaling about €77 billion and €50 billion in the first and subsequent 12 months, respectively.
- Net portfolio run-off: We net these amounts with our assumption of €17 billion of portfolio investments in the first 12 months and €11 billion in the subsequent 12 months, which we assume VW would undertake from own funds during periods of constrained capital market access. These estimates are based on an imputed debt-to-equity ratio that we apply to the gross portfolio run-off.
- Debt maturities of the group of about €85 billion in the first 12 months and €45 billion in the subsequent 12 months, which we calculate by subtracting our estimate of stable retail

deposits from total maturities of €103 billion in the first 12 months and €46 billion in the subsequent 12 months.

Our strong liquidity assessment for VW is also supported by the following considerations:

- Our view that VW enjoys well-established and solid banking relationships, evidenced by diverse and sizable revolving credit facilities (RCFs) and other bank debt across the different group divisions.
- Our liquidity coverage metric for the group being somewhat more than 1.0x for the 12 months from Sept. 30, 2023, well above the 0.5x threshold, below which we typically consider liquidity coverage to be weaker.
- A coverage ratio of scheduled asset maturities to contractual debt repayments slightly below 1x in the first 12 months, and materially above 1x in the subsequent 12 months.
- Good diversification of funding sources across markets and instruments, including bonds, bank debt, asset-backed securities, deposits, hybrid instruments, and commercial paper, as well as a track record of issuing these instruments in a variety of market conditions.

Principal liquidity sources

- Cash and liquid investments of more than €70 billion for the group (industrial and captive finance operations) as of Sept. 30, 2023.
- Undrawn committed credit facilities with a residual maturity of more than one year of €16.8 billion in the first 12 months (including RCFs at VW AG and TRATON SE of €10 billion and €4.5 billion, respectively, and a €2.3 billion line at VW Credit Inc. due August 2025), and €14.5 billion in the subsequent 12 months.
- Cash FFO from VW's automotive business of about €35 billion in both the first 12 months and subsequent 12 months.
- Minimum net cash receipts from operating lease installments of the existing leasing portfolio (excluding investments in new leased assets) of €8 billion in the first 12 months and €5 billion in the second 12 months.

Principal liquidity uses

- Cash outflow of about €24 billion in the first 12 months and €6 billion in the subsequent 12 months that reflects the net amount of cash receipts from the maturities of the existing captive asset portfolio, a reduced level of portfolio reinvestment from VW's own funds, and the debt maturities of the group, as further broken down above.
- Capex (including capitalized R&D) of €26 billion-€28 billion in each period.
- Peak intra-year working capital swings of up to €5 billion in each period.
- Our assumption of about €3 billion in each period for committed investments in partnerships and JVs.
- Dividend payouts of €5.5 billion-€6.5 billion in the first 12 months and €4.5 billion-€5.5 billion in the subsequent 12 months, including hybrid coupons and dividends to minority owners of Porsche.

Covenant Analysis

Requirements

There are no financial maintenance covenants in the documentation for the €10 billion syndicated facility issued by VW expiring in December 2026, nor in the group's other debt documentation, including for its unsecured bonds, asset-backed securities, commercial paper, and bank debt.

Environmental, Social, And Governance

Environmental factors are a negative consideration in our credit rating analysis of VW. We expect VW's share of BEVs in global LV sales (about 9% in 2023) will gradually increase toward its target of 50% by 2030, and the lower profitability will initially dilute VW's profitability unless mitigated by cost and revenue optimization measures. We also expect regulation; intense EV competition; the goal to become net carbon neutral in its LV division by 2050; and its ambitions with respect to battery cell production will require high investments in EV models and technology, plant upgrades, and the EV and battery supply chain. We estimate these at 13%-15% of adjusted sales (R&D plus capex in 2023-2025), complemented by substantial spending on partnerships in areas such as battery cell production. In our view, the shift toward EVs continues to provide opportunities for new players to enter the market, which intensifies competition in VW's key car markets, notably China and Europe.

Governance factors are also a negative consideration. VW's ownership structure and the composition of its supervisory board implies that important decisions often require a careful balancing act to reconcile the interests of key constituents, namely Porsche Automobil Holding SE, workers' representatives, the State of Lower Saxony, and Qatar Holding, whereas stakeholders not affiliated with these parties lack independent representation. This could slow down or--from a creditor's perspective--adversely influence important business decisions, for example with respect to footprint adjustments, restructuring and capacity reduction measures, vertical integration, or the disposal of assets, as seen in the partial IPO of Porsche. VW has progressed in overhauling its internal compliance and control structures and processes and has successfully emerged from the compliance monitorship mandated by the U.S. Department of Justice in 2020. However, it remains exposed to a certain level of litigation risk in connection with the diesel scandal as demonstrated by a contingent liability (€4.2 billion in 2022), which we include in our adjusted debt.

Issue Ratings--Subordination Risk Analysis

Capital structure

VW AG had €229.1 billion of financial debt on Sept. 30, 2023, of which €12.2 billion relates to the automotive business, and the remainder to VW's financial services business.

Analytical conclusions

Our issue ratings on the senior unsecured debt issued by Volkswagen International Finance N. V. and other issuing entities in the group are 'BBB+', the same level as the issuer credit rating. In view of VW's very strong financial risk profile, we believe that structural subordination does not pose a material risk at this stage.

The issue rating on VW's hybrid instruments is 'BBB-', two notches below the issuer credit rating because of contractual subordination and deferability of interests. We assign intermediate equity content to the outstanding hybrid instruments, which we see as a permanent layer in VW's capital structure representing less than 15% of the group's adjusted capital.

Rating Component Scores

Foreign currency issuer credit rating	BBB+/Stable/A-2
Local currency issuer credit rating	BBB+/Stable/A-2
Business risk	Satisfactory
Country risk	Low
Industry risk	Moderately High
Competitive position	Strong
Financial risk	Minimal
Cash flow/leverage	Minimal
Anchor	a
Diversification/portfolio effect	Neutral (no impact)
Capital structure	Neutral (no impact)
Financial policy	Neutral (no impact)
Liquidity	Strong (no impact)
Management and governance	Moderately Negative (-1 notch)
Comparable rating analysis	Negative (-1 notch)
Captive finance	Neutral (no impact)
Stand-alone credit profile	bbb+

Related Criteria

- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Jan. 7, 2024
- Criteria | Corporates | General: Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers, Oct. 23, 2023
- General Criteria: National And Regional Scale Credit Ratings Methodology, June 8, 2023
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings, Oct. 10, 2021
- General Criteria: Group Rating Methodology, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Criteria | Corporates | General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011
- General Criteria: Stand-Alone Credit Profiles: One Component Of A Rating, Oct. 1, 2010

Ratings Detail (as of February 20, 2024)*

Volkswagen AG	
Issuer Credit Rating	BBB+/Stable/A-2
Issuer Credit Ratings History	
28-Apr-2021	BBB+/Stable/A-2
26-Mar-2020	BBB+/Negative/A-2
06-Nov-2017	BBB+/Stable/A-2
Related Entities	
Banco Volkswagen S.A.	
Issuer Credit Rating	
Brazil National Scale	brAAA/Stable/--
Navistar Financial, S.A. de C.V. SOFOM, E.R.	
Issuer Credit Rating	
CaVal (Mexico) National Scale	mxAA+/Stable/mxA-1+
Senior Unsecured	
CaVal (Mexico) National Scale	mxAA+
Short-Term Debt	
CaVal (Mexico) National Scale	mxA-1+
Scania AB (publ.)	
Issuer Credit Rating	BBB/Stable/A-2
Nordic Regional Scale	--/--/K-2
South Africa National Scale	zaAAA/--/zaA-1+
TRATON SE	
Issuer Credit Rating	BBB/Stable/A-2
Volkswagen Bank GmbH	
Issuer Credit Rating	BBB+/Stable/A-2
Commercial Paper	
Local Currency	A-2
Senior Subordinated	BBB
Senior Unsecured	BBB+
Short-Term Debt	A-2
Volkswagen Financial Services AG	
Issuer Credit Rating	BBB+/Stable/A-2
Volkswagen Financial Services Polska SP. Z O.O.	
Senior Unsecured	A-2
Volkswagen Finans Sverige AB	
Issuer Credit Rating	

Ratings Detail (as of February 20, 2024)*

Nordic Regional Scale	--/--/K-1
Volkswagen International Belgium S.A.	
Issuer Credit Rating	BBB+/Stable/A-2
Volkswagen Leasing S.A. de C.V.	
Senior Secured	
CaVal (Mexico) National Scale	mxAAA
Short-Term Debt	
CaVal (Mexico) National Scale	mxA-1+

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings credit ratings on the global scale are comparable across countries. S&P Global Ratings credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.