Research Update:

Volkswagen 'BBB+/A-2' Ratings Off UCO; Affirmed Following Implementation Of New Captive Finance Criteria; Outlook Stable

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Rating Action Overview

- We have completed our ratings review of global carmaker Volkswagen AG (VW) and its subsidiaries under our new criteria for issuers with captive finance operations ("The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers," published Oct. 23, 2023).
- Although VW's financial services business has a meaningful exposure to residual value (RV) risk from its leasing business, and we expect this business to grow further, we believe VW has comprehensive risk management structures in place, along with a track record of successfully managing RV risk.
- We therefore affirmed our long- and short-term 'BBB+/A-2' issuer credit ratings on VW and its rated subsidiaries, including Volkswagen Bank GmbH and Volkswagen Financial Services AG, and excluding the Traton SE sub-group. We also affirmed our 'BBB+/A-2' issue ratings on the group's senior unsecured debt as well as our 'BBB-' issue ratings on its hybrid instruments. We removed all ratings (excluding those on the Traton SE sub-group) from under criteria observation.
- 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, enabling VW to achieve an S&P Global Ratings-adjusted EBITDA margin of 10%-12%, combined with free operating cash flow (FOCF) to sales of at least 3% and leverage below 0.5x.

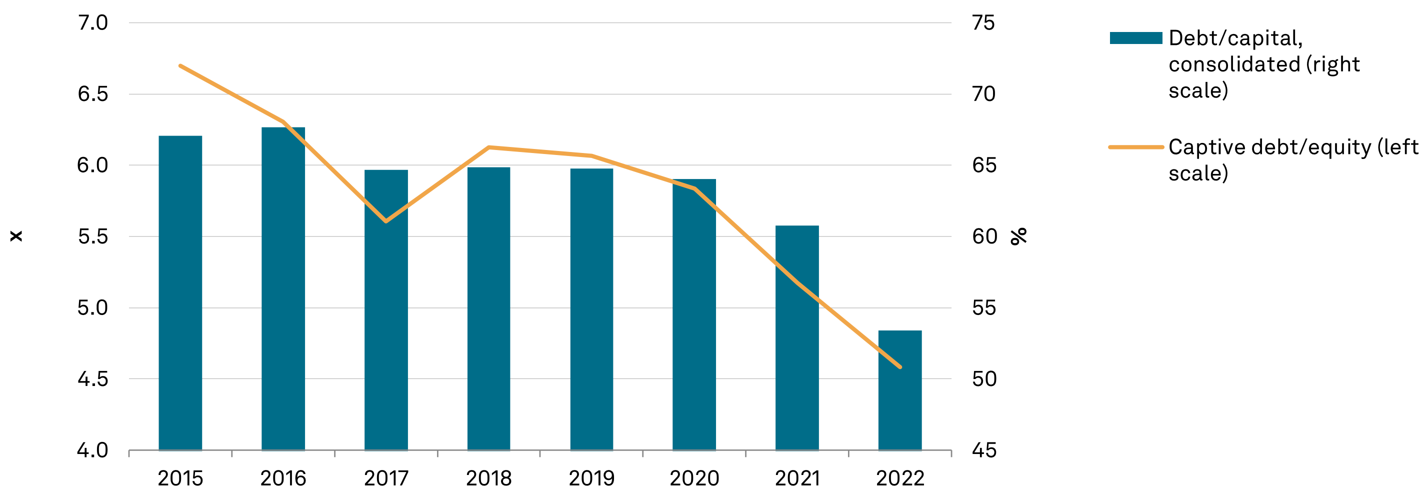
Rating Action Rationale

VW has a track record of successfully managing 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 1–3 percentage points in the next three years. This is due to the company's strategy to promote alternative models for car usage (different ways for people to pay for their car usage, like subscriptions as opposed to traditional car purchases, for example) during the transition to electric vehicles and to expand its offering in mobility services. Although this is likely to add to VW's overall exposure to RV risk, we think this is mitigated by the company's comprehensive risk management processes and systems. The bulk of the group's operating lease assets is located in the perimeter of Volkswagen Financial Services AG and the North American companies VW Credit Inc. and VW Credit Canada Inc. In our view, VW relies on a sophisticated RV modelling and forecasting process that combines quantitative modelling with other inputs and can draw on data from a large number of used car transactions, partly from platforms owned by the group. This has contributed to good performance of RV predictions, with realized RVs typically not deviating more than 5 percentage points from VW's projections at contract inception for several years prior to the recent inflation in used car prices. We also believe that the company's broad geographic reach helps VW take advantage of arbitrage opportunities in used car markets, which further improves RV performance. We therefore assess RV risk and our captive finance modifier as neutral to the rating, despite VW's leasing exposure exceeding 25%.

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 from 6.7x in 2015 (see chart). Among others, 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 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 53%-57% in the next three years.

VW's captive and consolidated leverage have reduced

Captive debt/equity (x) and consolidated debt/capital (%)



Source: S&P Global Ratings

We have kept our EBITDA margin threshold for the rating at 10% to reflect the effects of intra-group profit transfers. For the purpose of 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 industrial profit so eliminated is returned over time to the automotive business, and this re-transfer 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 per our estimates, this could imply a slight deviation of our adjusted EBITDA margin from our definition of industrial activity. We estimate that without these effects, our adjusted EBITDA margin could be about 0.5–1.0 percentage points lower. This is why we maintain our threshold for an EBITDA margin of 10% for VW, which is incrementally higher than for peers with the same business risk.

The revision of VW's full-year 2023 operating margin guidance has no impact on our base case. Before releasing its third-quarter earnings, VW withdrew its previous guidance for the group operating margin of 7.5%-8.5% in 2023, citing adverse impacts from raw material costs and a production stoppage indirectly caused by the flooding of a supplier plant in Slovenia as reasons. These factors will hinder VW's compensation of about €2.5 billion negative hedging valuation effects incurred in the first nine months of the year. The company now indicates an operating result at the 2022 level of €22.5 billion, or about €25 billion excluding hedge valuations. Because we adjust for unrealized gains and losses from hedging, and our previous forecast published Aug. 9, 2023, implied a group operating income of €24.7 billion, we have made only smaller updates to our base case after the results release. Our forecast for VW's FOCF of €9 billion-€10 billion is also nearly unchanged compared with the Aug. 9, 2023, forecast. Following about €5.4 billion reported net cash flow, excluding spending on mergers and acquisitions (M&A), this implies that cash flow performance in the fourth quarter will be important, in particular with respect to cash flows from working capital.

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 FOCF to sales of at least 3%, while maintaining leverage below 0.5x.

Downside scenario

Ratings downside could materialize 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 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%.

Company Description

Headquartered in Germany, VW is one of the world's leading auto manufacturers. During 2022, the group delivered 8.3 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: Scania, MAN, Navistar, and VW Truck and Bus.

VW's key geographical markets are Europe and Asia-Pacific, together accounting for more than 80% of total volumes. 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).

Our Base-Case Scenario

Assumptions

- Eurozone real GDP growth of 0.6% in 2023, down from 3.3% in 2022 and 5.0% in 2021, before recovering to 0.9% in 2024 and 1.5% in 2025. In China, we expect real GDP growth of 4.8% in 2023, after 3.2% in 2022 and 8.1% in 2021, followed by 4.5% growth in 2024 and 5.0% in 2025. In the U.S., we expect real GDP growth of 2.3% in 2023, after growth of 1.8% in 2022 and 5.7% in 2021, slowing to 1.3% growth in 2024 and 1.4% in 2025.
- Annual growth in global light vehicle sales of 5%-7% in 2023, slowing to 1%-3% in 2024 and 2%-4% in 2025, after a decline of about 2% in 2022 and 4% growth in 2021.
- Adjusted revenue growth of about 13.0% in 2023, after 12.5% in 2022, mainly driven by volume growth in both light vehicles (see the key metrics table below) and trucks, and some remaining favorable pricing effects. This is followed by 1.5% adjusted top-line growth in 2024 and about flat revenue in 2025, held back by a sharp deceleration in volumes and weakening net pricing.
- Higher volume and some remaining tailwinds from pricing explain the projected increase in our adjusted EBITDA margin in 2023, which we expect to partly reverse from 2024 as pricing turns into a headwind, the share of margin-dilutive EV sales further increases, and inflation on costs is not fully offset by efficiency measures.
- 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.
- Research and development (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 about 6% of automotive revenue, up from 5.5% in 2022, as VW spends on upgrading its production network for EV production, future platform launches, and investments in battery cell production.
- Total dividend payments of €11 billion-€12 billion in 2023, including a €6.7 billion cash outflow related to the special dividend in connection with last year's partial IPO of Porsche, and including regular dividends, hybrid coupons, and dividends to the minority owners of Porsche. This is followed by €5.5 billion-€6.5 billion of regular and minority dividends and hybrid coupons in 2024 and €4.5 billion-€5.5 billion in 2025.
- Annual spending on acquisitions and investments in JVs and partnerships, for example, for battery cell manufacturing, of about €5 billion annually in 2023–2025.

Key metrics

Volkswagen AG--Key forecast ratios*

	--Fiscal year ended Dec. 31--				
(Bil. EUR)	2021a	2022a	2023e	2024e	2025e
LV sales (mil. units)	8.6	8.0	8.9	9.1	9.2
Share of BEVs in LV sales (%)	5.2	7.2	8.5	13.6	19.5
Battery cell volume sourced (GWh)	about 36	about 47	about 63	about 107	about 150
Revenue	209.2	235.4	266.1	270.1	270.7
Revenue growth (%)	14.9	12.5	13.1	1.5	0.2
EBITDA	23.0	25.5	31.1	29.9	29.5
EBITDA margin (%)	11.0	10.8	11.7	11.1	10.9
Cash flow from working capital	2.4	(0.4)	(2.1)	1.0	(0.5)
Dividends from equity affiliates	3.0	2.8	2.5	2.3	2.0
Funds from operations (FFO)	19.1	21.3	26.2	25.6	25.5
Capital expenditure	10.4	12.6	15.6	15.8	15.9
Free operating cash flow (FOCF)	13.8	7.1	9.8	12.0	10.4
Debt	18.8	1.3	6.9	3.8	1.8
Debt to EBITDA (x)	0.8	0.1	0.2	0.1	0.1
FOCF to sales (%)	6.6	3.0	3.7	4.5	3.9
FOCF to sales, after M&A (%)	3.8	1.8	1.8	2.6	2.0

*All figures adjusted by S&P Global Ratings. a--Actual. e--Estimate. f--Forecast. N.M.--Not meaningful.

Liquidity

Our short-term rating on VW is 'A-2'. 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.

Following the implementation of the criteria, we perform our liquidity analysis for VW on a joint basis, which looks at industrial and captive operations in combination.

Principal liquidity sources as of Sept. 30, 2023, for the next 24 months include:

- Cash and liquid investments of €71.5 billion for the group (industrial and captive finance operations).
- Undrawn committed credit facilities with a residual maturity of more than one year of €16.8 billion in the first 12 months (including revolving credit facilities [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 €37 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 as of Sept. 30, 2023, for the next 24 months include:

- 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 below.
- 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.

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 €85 billion and €55 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 RCFs and other bank debt across the different group divisions.
- Our liquidity coverage metric for the group of 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.

Covenants

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.

Issue Ratings - Subordination Risk Analysis

The application of the new criteria does not affect the way we apply notching in deriving our issue credit ratings. Following the affirmation of our issuer credit ratings on VW, we have therefore also affirmed all our issue credit ratings. For a discussion of how we derive our issue ratings, please see our full analysis on VW, published Feb. 21, 2023.

Ratings Score Snapshot

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	Fair (-1 notch)
Comparable rating analysis	Negative (-1 notch)
Captive finance	Neutral (no impact)

Related Criteria

- Criteria | Corporates | General: Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers, Oct. 23, 2023
- General Criteria: Hybrid Capital: Methodology And Assumptions, March 2, 2022
- Criteria | Financial Institutions | Banks: Banking Industry Country Risk Assessment Methodology And Assumptions, Dec. 9, 2021
- Criteria | Financial Institutions | General: Financial Institutions Rating Methodology, Dec. 9,

2021

- 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
- Criteria | Financial Institutions | General: Risk-Adjusted Capital Framework Methodology, July 20, 2017
- 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
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011

Ratings List

*************** Volkswagen AG ***************	
Ratings Affirmed	
Volkswagen AG	
Issuer Credit Rating	BBB+/Stable/A-2
Senior Unsecured	BBB+
Commercial Paper	A-2
Volkswagen International Belgium S.A.	
Issuer Credit Rating	BBB+/Stable/A-2
Volkswagen Finans Sverige AB	
Issuer Credit Rating	
Nordic Regional Scale	--/--/K-1
Commercial Paper	A-2
Volkswagen Bank GmbH	
Issuer Credit Rating	BBB+/Stable/A-2
Senior Subordinated	BBB
Commercial Paper	A-2

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Ratings Affirmed	
Volkswagen Financial Services AG	
Issuer Credit Rating	BBB+/Stable/A-2
Senior Unsecured	BBB+
Commercial Paper	A-2
Volkswagen Financial Services Australia Pty Ltd.	
Senior Unsecured	BBB+
Commercial Paper	A-2
Volkswagen Financial Services Japan Ltd.	
Senior Unsecured	BBB+
Commercial Paper	A-2
Volkswagen Financial Services N.V.	
Senior Unsecured	BBB+
Commercial Paper	A-2
Volkswagen Financial Services Polska SP. Z O.O.	
Senior Unsecured	A-2
Senior Unsecured	BBB+
Porsche Holding GmbH	
Commercial Paper	A-2
Skofin s.r.o.	
Commercial Paper	A-2
VW Credit Canada Inc.	
Senior Unsecured	BBB+
Commercial Paper	A-1(LOW)
Commercial Paper	A-2
VW Credit Inc.	
Commercial Paper	A-2
Volkswagen Canada Inc.	
Commercial Paper	A-1(LOW)
Commercial Paper	A-2
Volkswagen Group of America Finance LLC	
Senior Unsecured	BBB+
Commercial Paper	A-2
Volkswagen International Finance N.V.	
Senior Unsecured	BBB+
Junior Subordinated	BBB-
Commercial Paper	A-2

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Ratings Affirmed	
Volkswagen International Luxemburg S.A.	
Commercial Paper	A-2
Volkswagen Leasing GmbH	
Senior Unsecured	BBB+
Commercial Paper	A-2

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.spglobal.com/ratings for further information. A description of each of S&P Global Ratings' rating categories is contained in "S&P Global Ratings Definitions" at https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/sourceId/504352. Complete ratings information is available to RatingsDirect subscribers at www.capitaliq.com. All ratings affected by this rating action can be found on S&P Global Ratings' public website at www.spglobal.com/ratings. Alternatively, call S&P Global Ratings' Global Client Support line (44) 20-7176-7176.