S&P Global
Ratings

Research

Volkswagen AG

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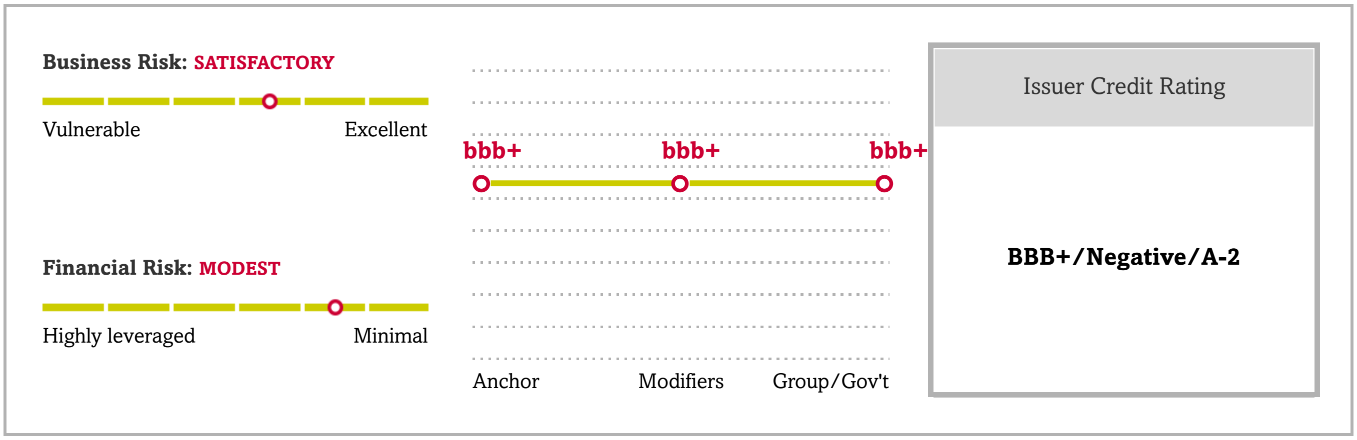
Table Of Contents

Table Of Contents (cont.)

Volkswagen AG



Credit Highlights

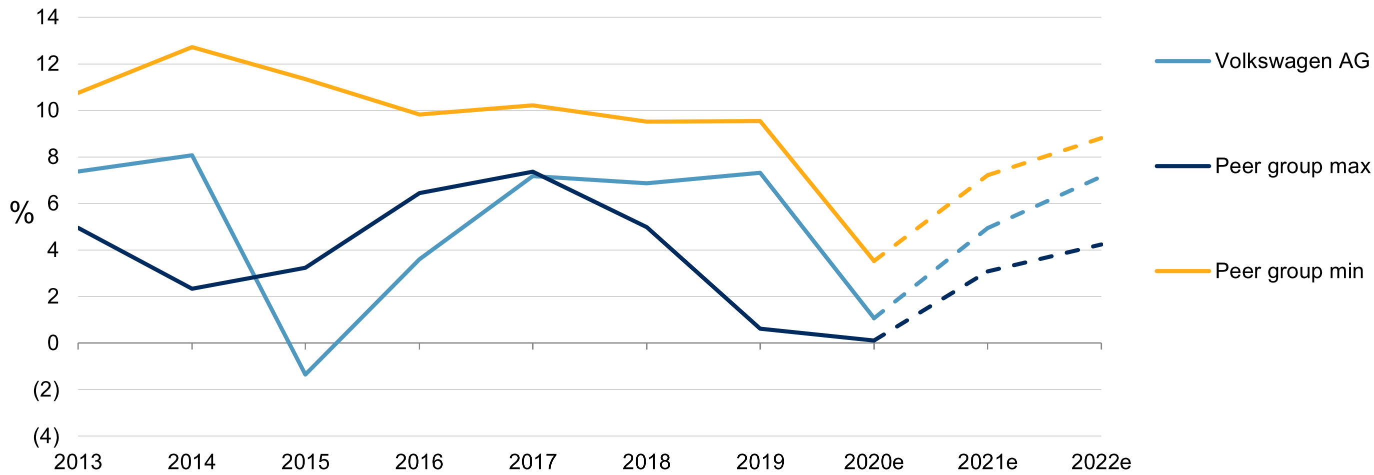
Overview

Key strengths	Key risks
Leading global automaker, with almost one-quarter of the passenger car market in Europe, and a commanding market share in China of about 20%, combined with high localization of production and local supply chain.	Relatively inflexible cost structure, due to rigid research and development (R&D) and capital expenditure (capex), exposes profitability to the risk of a material decline in demand.
Product breadth and diversity, ranging from volume to premium passenger cars to commercial vehicles.	Reliability and stability of the electric vehicle (EV) battery supply chain.
E-mobility leader with product offering across all segments in two of the most critical markets, Europe and China.	Proprietary software ambitions for a group with no established technology experience
Superior access to funding both at the captive and industry level, and very diversified funding sources, including hybrid instruments and green bonds.	The EV transition and VW's targeted transformation into a tech and software company may test governance.

Declining vehicle volumes are likely to weigh heavily on VW's credit metrics in 2020, but we expect a rebound in 2021. We anticipate that the sharp decline in global light vehicle volumes of about 20% in 2020 will result in material deterioration of VW's revenue and EBITDA. However, we note that VW benefits from a strong market position in China (more than 40% of sales in 2020 year to date), where we expect a quicker rebound than in Europe. VW's premium brands, Audi and Porsche, are proving more resilient than its mass-market brands, Skoda and SEAT, which are also more focused on Europe. Consequently, we expect credit ratios will temporarily dip below our threshold for the rating in 2020, with adjusted funds from operations (FFO) to debt of about 40%, free operating cash flow (FOCF) to debt of 2.5%-3.5%, and debt to EBITDA of about 2.0x-2.5x. However, we forecast of a recovery in volumes in 2021-2022, and expect the company's metrics will start rebounding in 2021 and be even stronger than pre-COVID-19 levels in 2022, except for FOCF.

Chart 1

S&P Global Ratings' Adjusted EBIT Margin After Special Items



Source: S&P Global Ratings. Peer Group includes Daimler, BMW, Toyota, Honda and General Motors.
e--estimate.

We see execution risk around VW's plan to become the global leader in battery EVs (BEVs), given the battery supply chain's uncertain stability. As part of its strategy, VW intends to invest €35 billion in e-mobility by 2024, substantially raise the offering of BEVs in both Europe and China by 2025, and support the development of battery production capacity.

We believe the success of VW's EV strategy is predicated on a stable and reliable battery supply chain. Currently, the battery industry is dominated by producers in Asia (including LG Chem, Chinese Contemporary Amperex Technology Co. [CATL], Chinese Build Your Dreams, and Panasonic), and we estimate aggregated production capacity of at about 300 gigawatt hours (GWh) in 2020. Under its electrification strategy, we estimate the group's annual capacity requirements in Europe alone from 2025 at about 150 GWh, and we expect demand on a similar scale in Asia. In China, where the group's goal is to sell as many as 1.5 million new energy vehicles(NEVs) by 2025, VW was a first mover (followed by Daimler shortly thereafter) when it announced it was acquiring a controlling stake in midsize battery producer Guoxuan. However, for the bulk of its battery supply, VW like Tesla relies on CATL as a strategic supplier. With its European partner Northvolt AB, VW plans to set up a cell factory in Germany, which would have an initial capacity of 16 GWh and come online at the start of 2024. We believe that it is not yet clear where a substantial part of the battery supply needed to support VW's planned EV development will come from, and consider this a key risk for VW's successful EV deployment.

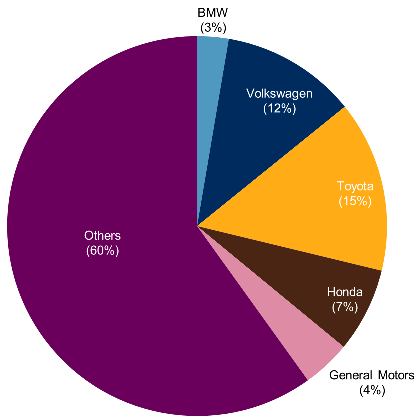
VW should be able to handle margin pressure from its shift toward EV better than many peers. Under its electrification strategy, we estimate VW will be able to sharply increase its mix of electrified low-emission vehicles toward 25% by 2025 from below 10% in 2020. While we have always assumed that there is some margin dilution correlated to the mix gradually shifting toward BEV, VW should be able to better manage the expected margin pressure than many of its peers thanks to cost efficiencies generated by its dedicated EV platform, MEB. VW has built the new ID family (ID.3 and ID.4) on the platform, and will add other brands' vehicles, namely the SKODA ENYAQ and Audi Q4 e-tron, in

2021.

While achieving carbon emissions targets for 2020 remains a challenge for VW, the financial impact should be manageable. The group confirmed that achieving its carbon emissions target of 96 grams per kilometer (g/km) in Europe by the end of 2020 remains difficult, but the potential financial impact should be manageable. This is consistent with our assumption of a €1 billion max impact in our base case.

Chart 2

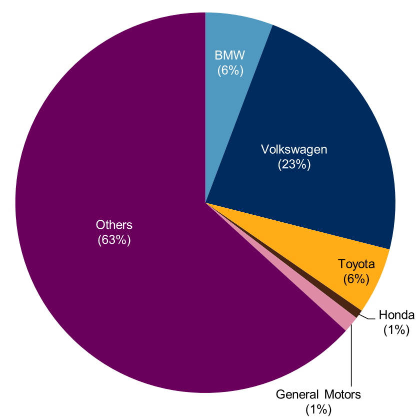
Volkswagen Is A Leader In Asia-Pacific's Light Vehicles Market



Source: LMC.

Chart 3

Volkswagen Is The Leader In The European Light Vehicles' Market



Source: LMC.

VW's proprietary software ambitions are an uncommon for the auto industry, and likely to be challenging given a lack of tech experience. While many original equipment manufacturers (OEMs) have decided to partner with tech companies to develop information technology (IT) architecture and software to address the increasing prevalence of connectivity and autonomous driving, VW unveiled a different approach. To maintain full ownership of intellectual property and potentially future revenue streams, VW plans to invest €27 billion by 2025 to create a proprietary IT infrastructure and develop software. While the scale of VW's operations fully supports the economics of the investment, execution is ambitious for a group with no established tech experience. The delayed roll-out of the new ID.3 model due to software issues might be linked to the above strategic move.

VW's governance remains a rating constraint, and we consider the planned EV transformation will put governance to the test. VW successfully completed the Independent Compliance Monitorship under agreements with U.S. authorities in 2020, which were initiated back in 2017. While we view this as positive, it does not change our assessment of VW's management and governance, which currently constrains our 'BBB+' rating on VW. We believe the group's planned transformation from a traditional combustion engine vehicle manufacturer into an EV global leader will be the true test of the group's governance. We consider that successful EV deployment will allow the group to distance itself progressively from the diesel scandal. For now, we continue to observe new diesel-related claims in Europe.

Outlook: Negative

The negative outlook reflects uncertain market conditions during the aggressive second wave of COVID-19 infections, which is hitting regions critical to the group, namely Europe and South America. We see recovery in the same regions as relatively slow over 2021 and 2022. At the same time, the group plans to spend billions to roll out electrification on a global scale, develop proprietary IT architecture, and invest in new technologies, which entails execution risks, in our view.

Downside scenario

We could downgrade VW if the group's credit metrics do not recover in 2021 from the levels we expect in 2020. This could unfold, in our view, if market conditions deteriorated again or if VW failed to execute on its ambitious strategy consisting of model launches and quick upgrades of electrified and connectivity technologies.

Upside scenario

We could revise the outlook to stable if we saw increased headroom of credit metrics under the current rating, namely adjusted FFO to debt above 45%, debt to adjusted EBITDA below 2x, and an adjusted EBITDA margin exceeding 10%. A stable outlook would also be predicated on the group successfully increasing its mix toward EV and making solid progress in achieving compliance with emission regulations in Europe and China.

Our Base-Case Scenario

Assumptions

- Global GDP to fall by 3.8% this year due to the pandemic, followed by a rebound in 2021 of 5.2%.
- In 2020, U.S. and eurozone GDP to contract by 4.1% and 7.4%, respectively, and for modest GDP growth in China of 2.1%.
- Global light vehicles sales to fall 20% this year compared with 2019, following the sales and production disruption due to the pandemic.
- A 20% drop in revenue for VW in 2020 in light the assumption above, recovering in 2021 by about 15%.
- Up to €1 billion in penalties from noncompliance with European emission regulation, weighing on 2021 credit metrics. Still, the potential termination of generous EV incentives in Europe might need to be partially absorbed by VW with additional sales incentives to ensure the sales volumes needed for phasing out regulatory credits from 2021.
- Annual dividends of about €3 billion from Chinese joint ventures.
- A contraction in the company's adjusted EBITDA margin to less than 10% in 2020 due to lower volumes, from 12.2% in 2019, before improving to about 11% in 2021.
- Auto working capital absorption worth €7 billion in 2020, followed by a normalization featuring an outflow of about€1.0 billion in 2021.
- Annual capex (including capitalized development costs) of 7.0%-7.2% of automotive revenue for 2020-2021, compared with 6.6% in 2019.
- Dividend payments moderating to €2.5 billion in 2020, before gradually increasing to €3.0 billion per year from 2021.
- Acquisition related outflows of €2.0 billion and €5.0 billion in 2020 and 2021, respectively, to reflect investments in China and the acquisition by Traton of Navistar in the U.S.

Key Metrics

Volkswagon AG--Key Metrics

	--Fiscal year ended Dec. 31--				
	2018a	**2019a**	**2020e**	**2021e**	**2022e**
Revenues (bil. €)	201.1	212.5	170	190-200	210-220
EBITDA margin (%)	12.2	12.2	7.0-7.5	About 11	About 13
Debt to EBITDA (x)	1.1	0.9	2.0-2.5	1.0-1.5	1.0
FFO to debt (%)	79	88	40	>60	>80
FOCF (bil. €)	0.9	11.6	0.7	3-4	6-7

*All figures adjusted by S&P Global Ratings. FFO--Funds from operations. FOCF--Free operating cash flow. a--Actual. e--Estimate.

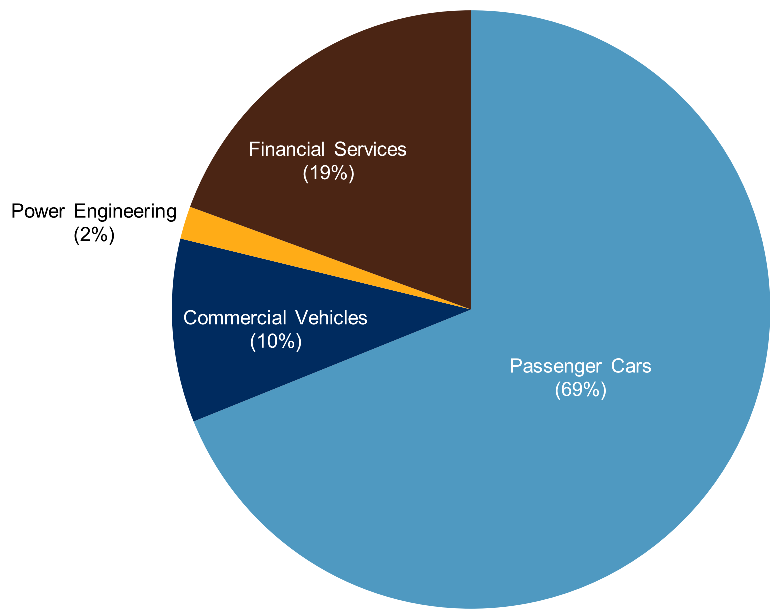
Company Description

Headquartered in Germany, VW is one of the world's leading automotive manufacturers. During the first nine months of 2020, the group delivered 6.5 million passenger cars and commercial vehicles, across the volume, premium, and luxury segments, including vehicles sold by unconsolidated joint ventures in China. Key brands include:

- Light Vehicles: VW, Audi, Porsche, Skoda, SEAT, Bentley, and VW Commercial Vehicles; and
- Commercial vehicles: Scania and MAN.

Chart 4

Volkswagen AG--Revenue Breakdown By Segment

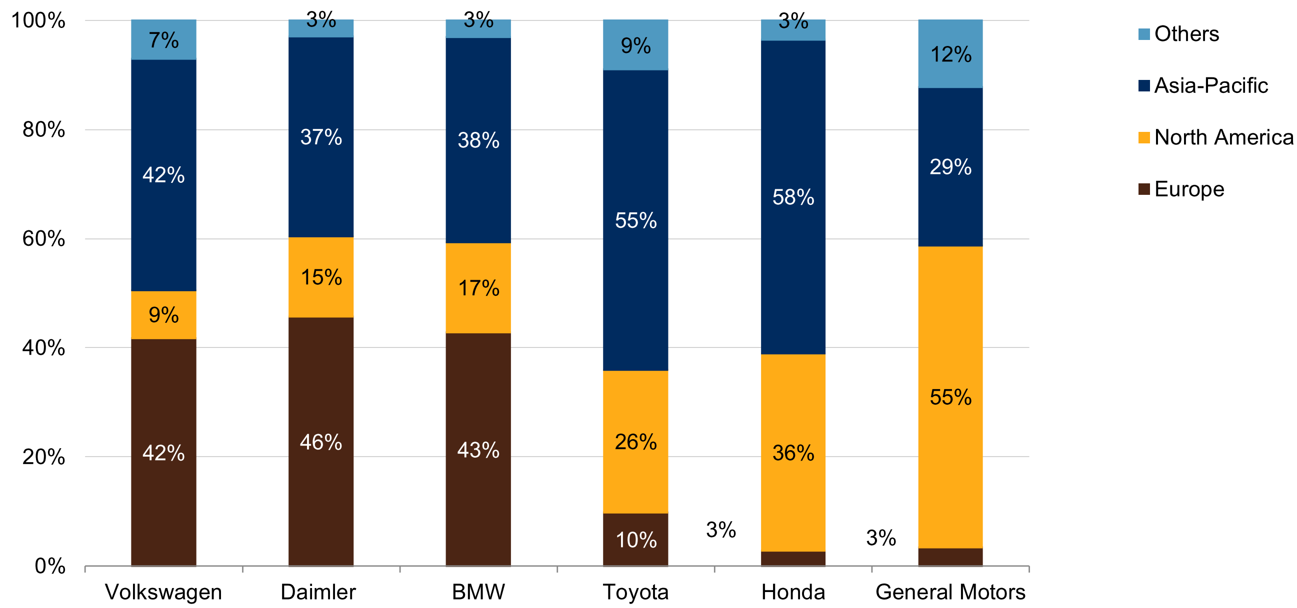


Source: Volkswagen AG as of third-quarter 2020.

VW's key geographic markets are Europe and Asia-Pacific, each representing more than 40% of total volumes. VW has a less significant market position (4.5% market share) in North America. The group also has financial services activities that support the sale and leasing of its vehicles. At the end of September 2020, the group had €23.8 million of leasing and financing contracts in the financial services division.

Chart 5

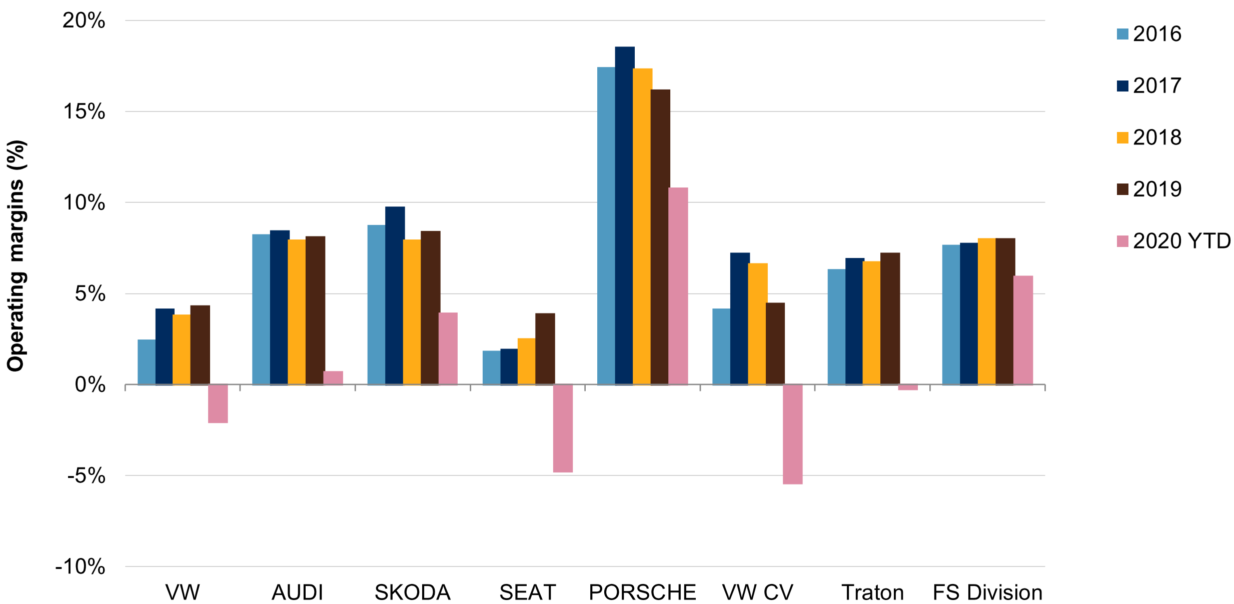
Automakers' Geographic Breakdown Of Deliveries (2019)



Source: LMC.

Chart 6

Volkswagen AG--Operating Margins By Brand/Division, Before Special Items



Source: S&P Global Ratings.

Peer comparison

Table 1

Volkswagen AG--Peer Comparison

Industry Sector: Automotive - Oem'S

	Volkswagen AG	Daimler AG	BMW AG	General Motors Co.	Toyota Motor Corp.
Ratings as of Dec. 2, 2020	BBB+/Negative/A-2	BBB+/Negative/A-2	A/Negative/A-1	BBB/Negative/--	A+/Negative/A-1+
	--Fiscal year ended Dec. 31, 2019--				--Fiscal year ended March 31, 2020--
(Mil. €)					
Revenue	212,472.0	144,099.0	76,000.0	109,337.9	234,592.4
EBITDA	25,832.0	7,072.0	9,628.0	11,571.2	27,739.7
Funds from operations (FFO)	20,972.0	6,053.4	6,385.0	10,305.8	21,726.7
Interest expense	2,618.0	817.0	273.0	799.4	428.2
Cash interest paid	2,672.0	59.6	199.0	704.9	417.7

Table 1

Volkswagen AG--Peer Comparison (cont.)

Industry Sector: Automotive - Oem'S

	Volkswagen AG	Daimler AG	BMW AG	General Motors Co.	Toyota Motor Corp.
Cash flow from operations	25,494.0	9,902.0	7,542.0	6,185.2	22,061.1
Capital expenditure	13,939.0	7,562.0	4,749.0	6,723.5	12,963.2
Free operating cash flow (FOCF)	11,555.0	2,340.0	2,793.0	(538.3)	9,097.8
Discretionary cash flow (DCF)	8,656.0	(1,442)	427.0	(2,632.4)	(626.6)
Cash and short-term investments	42,692.0	27,538.0	17,427.0	17,761.8	48,183.5
Debt	23,945.8	1,342.0	0.0	13,319.0	0.0
Equity	85,810.5	47,858.0	40,174.0	28,810.8	150,182.9
Adjusted ratios					
EBITDA margin (%)	12.2	4.9	12.7	10.6	11.8
Return on capital (%)	14.3	1.7	12.7	11.6	15.1
EBITDA interest coverage (x)	9.9	8.7	35.3	14.5	64.8
FFO cash interest coverage (x)	8.8	102.6	33.1	15.6	53.0
Debt/EBITDA (x)	0.9	0.2	0.0	1.2	0.0
FFO/debt (%)	87.6	451.1	N.M.	77.4	N.M.
Cash flow from operations/debt (%)	106.5	737.9	N.M.	46.4	N.M.
FOCF/debt (%)	48.3	174.4	N.M.	(4.0)	N.M.
DCF/debt (%)	36.1	(107.5)	N.M.	(19.8)	N.M.

N.M.--Not meaningful

Business Risk: Satisfactory

Volkswagen's business risks profile is supported by the group's commanding positions in Europe and China, with a market share of close to 25% and 20%, respectively. Together with Toyota, VW tops the global OEM ranking by volumes, with more than 10 million vehicles delivered per year. Unlike its Japanese peer however, VW manages a larger portfolio of brands ranging from luxury to premium and volume passenger vehicles. Light commercial vehicles and trucks (Traton) add to the diversity of VW's portfolio. We believe that scale of operations is a supporting factor in an industry faced with massive investments in R&D and capex, where capital allocated to investments in software and new technologies has a chance to be recovered more easily through high volumes.

Over the next two years, VW will capitalize on its market share in China, the market with the highest growth potential over 2021-2011 in our view. In this area, VW operates via three join ventures with SAIC, FAW, and JAC. VW-SAIC and VW-FAW are critical for VW's goal of achieving BEV sales as high as 1.5 million vehicles by 2025. While NEV volumes are still relatively low for SAIC and FAW ventures, NEV production is transitioning to VW's dedicated platform MEB, in the Anting and Foshan plants. Chinese operations contribute to VW's annual FOCF with a €3 billion dividend flow, which proves critical in a tough 2020. VW-JAC will not contribute materially to volumes from now to 2025. The group high localization of production and supply chains has been an advantage in recent years, since it has shielded VW from risk related to tariffs.

One of the most critical factors underlining VW's competitive advantage is its ambition of becoming the global EV leader by 2030. VW is deploying its EV offensive in the two markets where regulation is steering the transition to e-mobility, namely China and Europe. Electrification is the most relevant medium-term trend in the global auto industry. Because of the still-high cost of batteries, we assume electrification will be associated with pressure on margins at least until massive deployment becomes mainstream. We consider VW to have a competitive advantage in this space given its dedicated EV platform, MEB, which will serve the group's multiple brands and enable cost synergies for potentially inflexible input costs. Furthermore, VW will be able to sell approximately 600,000 MEB platforms to its partner Ford, which will generate incremental revenue and increase the group's return on investments.

The transition to alternative powertrains, however, is only a part of the competitive equation that VW needs to get right to compete in China and Europe with the current EV global leader, Tesla. Connectivity, software, battery technology, and autonomous driving are equally important competitive drivers, where VW's advantage still needs to be proven. To close the gap with Tesla, VW's German peer Daimler teamed up with U.S. tech giant Nvidia to develop a next generation chip and software platform useful for autonomous driving. VW, however, plans to develop a proprietary IT infrastructure on its own terms. This option keeps intellectual property and potential future revenue streams within VW, yet execution exposes the group to substantial risks as it explores new territories.

Alternative technologies, hydrogen in particular, appear not to be specifically on the radar for VW, even in its truck business (Traton). This contrasts with German peer Daimler, which recently partnered with Volvo AB to develop, produce, and commercialize fuel cell systems for heavy duty trucks in view of tightening emission regulations (set to kick in Europe from 2025). Unlike for Daimler, the impact of the commercial vehicle business on VW's consolidated revenue is rather limited (10% of consolidated revenue year-to-date 2020).

Financial Risk: Modest

We forecast that VW's FFO to debt will be about 40% and its debt to EBITDA 2.0x for 2020, and above 60% and less than 1.5x, respectively, over our forecast horizon to 2022. This will be a result of the COVID-19-related downshift and subsequent recovery in auto sales.

We expect VW will manage its dividend policy, despite the challenging market environment triggered by the pandemic. We therefore do not anticipate a change of the dividend policy--a 20% payout ratio—over 2020-2021 (€2.4 billion already paid in October 2020).

VW has a substantial financial services business that supports the sale and leasing of its vehicles. On Sept. 30, 2020, the group had captive finance receivables and operating lease assets of about €185 billion. We regard the asset quality of the €137 billion of finance receivables--primarily vehicle-financing term loans--to be excellent, based on annual net credit losses of less than 1% in recent years.

Lease assets of about €48 billion on Sept. 30, 2020, expose the financial business to the risk of residual value losses. These arise when the proceeds from the sale of the assets at the end of the lease periods are lower than expected. VW manages this as part of its risk management framework. Such losses are naturally unpredictable and can be significant during periods of stress, thereby potentially weakening the overall creditworthiness of the group. For VW, lease assets comprise a rising share (19.9% as of September 2020, up from 19.4% in December 2019) of its total captive finance-related assets.

To finance these captive assets, VW has incurred sizable debt obligations. These stood at about €189 billion on Sept. 30, 2020, and represented almost all of the group's total gross debt of €210.8 billion. Leverage, that is, reported debt to equity, in the captive finance operations was 6.1x, lower than peers' leverage, and we expect that VW will maintain it at a similar level. VW's captive finance operations rely heavily on short-term financial liabilities, which stood at about €93 billion on Sept. 30, 2020. We see these liabilities as relatively concentrated in terms of duration, but consider them to broadly match short-term finance receivables and other short-term assets.

We continue to regard VW's captive finance entities Volkswagen Financial Services AG and Volkswagen Bank GmbH as core entities, reflecting our view that the parent would support them under any foreseeable circumstances.

Financial summary

Table 2

Volkswagen AG--Financial Summary

Industry Sector: Automotive - Oem'S					
	--Fiscal year ended Dec. 31--				
	2019	**2018**	**2017**	**2016**	**2015**
(Mil. €)					
Revenue	212,472.0	201,067.0	196,949.0	186,016.0	183,935.0
EBITDA	25,832.0	24,469.0	24,228.5	17,473.0	7,712.5
Funds from operations (FFO)	20,972.0	20,338.5	20,339.2	10,840.9	1,913.3
Interest expense	2,618.0	2,155.1	2,460.3	2,592.6	2,798.2
Cash interest paid	2,672.0	345.5	374.3	3,106.1	2,815.2
Cash flow from operations	25,494.0	14,027.4	7,049.2	15,125.9	19,347.3
Capital expenditure	13,939.0	13,157.0	12,548.0	12,712.0	12,659.0
Free operating cash flow (FOCF)	11,555.0	870.4	(5,498.8)	2,413.9	6,688.3
Discretionary cash flow (DCF)	8,656.0	(1,532.6)	(6,830.8)	2,049.9	4,172.3
Cash and short-term investments	42,692.0	46,018.0	34,396.0	36,785.0	35,878.0
Gross available cash	33,226.0	37,546.0	27,337.0	29,235.0	27,948.0
Debt	23,945.8	25,875.7	31,754.0	36,089.0	31,549.2
Equity	85,810.5	81,958.0	75,538.0	65,346.5	63,586.0
Adjusted ratios					
EBITDA margin (%)	12.2	12.2	12.3	9.4	4.2
Return on capital (%)	14.3	12.8	13.5	6.8	(2.6)
EBITDA interest coverage (x)	9.9	11.4	9.8	6.7	2.8
FFO cash interest coverage (x)	8.8	59.9	55.3	4.5	1.7
Debt/EBITDA (x)	0.9	1.1	1.3	2.1	4.1

Table 2

Volkswagen AG--Financial Summary (cont.)

Industry Sector: Automotive - Oem'S

	--Fiscal year ended Dec. 31--				
	2019	**2018**	**2017**	**2016**	**2015**
FFO/debt (%)	87.6	78.6	64.1	30.0	6.1
Cash flow from operations/debt (%)	106.5	54.2	22.2	41.9	61.3
FOCF/debt (%)	48.3	3.4	(17.3)	6.7	21.2
DCF/debt (%)	36.1	(5.9)	(21.5)	5.7	13.2

Liquidity: Strong

Our short-term rating on VW is 'A-2'. We assess the group's liquidity as strong, since we expect liquidity sources--namely, available cash, committed facilities with maturities of at least 12 months, and our estimates of FFO--to cover uses by at least 1.5x in 2020 and the following 12 months. Our view is supported by VW's large diversification of funding sources across markets and instruments, including hybrid debt. We calculate the following liquidity sources and uses as of Sept. 30, 2020.

Principal Liquidity Sources

- Cash and cash equivalents of €47.8 billion in the automotive segment.
- More than €10 billion of availability under its automotive committed credit facilities.
- Automotive FFO generation of approximately €20 billion.

Principal Liquidity Uses

- Automotive debt maturities of €7.0 billion over the next 12 months and €14 billion over the following 24 months.
- Working capital requirements of €7.0 billion over the next 12 months (with some intrayear swings of €1.0 billion) and about €1.0 billion over the following 24 months.
- Capex of about €18 billion-€20 billion annually (including capitalized R&D).
- Acquisition related average outflows of €4 billion over the next 12 months.
- Dividend payout of about €2.8 billion-€3.2 billion per annum over the next 12-24 months.

Debt maturities

As of June 2020 (consolidated debt figures):

- 2021: €12.5 billion
- 2022: €13 billion
- 2023: €9 billion
- 2024: €9.5 billion
- 2025 and beyond: €166.8 billion

Environmental, Social, And Governance

We continue to assess VW's management and governance as fair, and constraint for the rating because the consequences of the diesel emissions testing scandal continue to weigh on cash flows (about €2 billion in 2019 and 2020), albeit less than in the past. In addition, although not expected, if VW became a second offender (a class action lawsuit was recently filed in Europe), VW could face even higher fines from regulators and more damage to its reputation if additional misconduct comes to light at one of its subsidiaries. We view VW's ownership structure as negatively influencing its corporate decision-making, with limited consideration given to minority shareholders. In particular, this reflects the continued disproportionate voting rights of Porsche Automobile Holding SE (Porsche SE). Porsche SE has a 53.1% share in VW, held through only 31.3% of VW's subscribed capital, which gives it control of VW (except on matters linked to factory and headquarters location). Porsche SE is itself 100% controlled by members of the Porsche and Piech families.

VW successfully completed the Independent Compliance Monitorship under agreements with U.S. authorities in 2020, which were initiated back in 2017. While we view this as positive, it does not change our assessment of VW's management and governance, which currently constrains our 'BBB+' rating on VW. We believe the group's planned transformation from a traditional combustion engine vehicle manufacturer into an EV global leader will be the true test of the group's governance. We consider that successful EV deployment will allow the group to distance itself progressively from the diesel scandal.

We see VW as more exposed to environmental factors than the broader industry because of its leadership in Europe where environmental regulation is particularly restrictive and punitive. In Europe, where VW controls a little less than 25% of the passenger market, VW is managing a reduction of more than 25g/km to secure compliance with 2020 average fleet carbon emission targets (95g/km-100g/km). To achieve this, VW, unlike some of its global peers, is accelerating the deployment of pure battery vehicles and has developed a separate platform for its EV portfolio, which has been translating into R&D and capex above 12% of sales in recent years. We expect VW to come close to its carbon emissions target in Europe for 2020, and to manage potential fines, which we estimated at max €1 billion in our base case. Because regulatory credits in Europe have a degressive structure the mix of low-emitting vehicles will need to increase in 2021. It is unclear to date whether government incentives will continue to support the transition to e-mobility. If not, OEMs including VW might need to suffer some dilution of margins to increase volumes.

Issue Ratings - Subordination Risk Analysis

Our issue ratings on the senior unsecured debt issued by Volkswagen Financial Services and other group financial entities that we consider core are 'BBB+'. In view of VW's solid financial risk profile, we believe that structural subordination does not pose any risks. The issue rating on VW's hybrid instruments is 'BBB-', two notches below the issuer credit rating due to contractual subordination and deferability of interests. We assign intermediate equity content to the outstanding hybrid instruments, which we see a permanent layer of VW's capital structure representing less than 15% of the group's adjusted capital.

Reconciliation

Table 3

Volkswagen AG--Reconciliation Of Reported Amounts With S&P Global Ratings' Adjusted Amounts

	--Fiscal year ended Dec. 31, 2019--								
Volkswagen AG reported amounts (mil. €)									
	Debt	**Shareholders' equity**	**Revenue**	**EBITDA**	**Operating income**	**Interest expense**	**S&P Global Ratings' adjusted EBITDA**	**Cash flow from operations**	**Capital expenditure**
	196,065.0	121,780.0	252,632.0	41,099.0	16,960.0	1,618.0	25,832.0	17,983.0	19,401.0
S&P Global Ratings' adjustments									
Cash taxes paid	--	--	--	--	--	--	(2,914)	--	--
Cash interest paid	--	--	--	--	--	--	(2,604)	--	--
Reported lease liabilities	6,210.0	--	--	--	--	--	--	--	--
Intermediate hybrids reported as equity	6,331.5	(6,331.5)	--	--	--	270.0	--	--	--
Postretirement benefit obligations/deferred compensation	32,361.0	--	--	(23)	(23)	662.0	--	--	--
Accessible cash and liquid investments	(30,235.7)	--	--	--	--	--	--	--	--
Capitalized interest	--	--	--	--	--	68.0	(68)	(68)	(68)
Capitalized development costs	--	--	--	(5,171)	(1,107)	--	--	(5,171)	(5,171)
Dividends received from equity investments	--	--	--	3,786.0	--	--	--	--	--
Captive finance operations	(191,189)	(31,508)	(40,160)	(11,649)	(3,219)	--	726.0	12,750.0	(223)
Nonoperating income (expense)	--	--	--	--	4,004.0	--	--	--	--
Noncontrolling interest/minority interest	--	1,870.0	--	--	--	--	--	--	--
Debt: Guarantees	402.9	--	--	--	--	--	--	--	--

Table 3

Volkswagen AG--Reconciliation Of Reported Amounts With S&P Global Ratings' Adjusted Amounts (cont.)

Debt: Put options on minority stakes	300.0	--	--	--	--	--	--	--	--
Debt: Other	3,700.0	--	--	--	--	--	--	--	--
EBITDA: Other	--	--	--	(2,210)	(2,210)	--	--	--	--
Depreciation and amortization: Other	--	--	--	--	1,147.0	--	--	--	--
Total adjustments	(172,119.2)	(35,969.5)	(40,160.0)	(15,267.0)	(1,408.0)	1,000.0	(4,860.0)	7,511.0	(5,462.0)

S&P Global Ratings' adjusted amounts

	Debt	Equity	Revenue	EBITDA	EBIT	Interest expense	Funds from operations	Cash flow from operations	Capital expenditure
	23,945.8	85,810.5	212,472.0	25,832.0	15,552.0	2,618.0	20,972.0	25,494.0	13,939.0

We exclude the reported group debt from our adjusted debt figures, leading us to calculate adjusted debt of €23.9 billion at year-end - 2019. Our main analytical adjustments to total reported gross debt of €196 billion are to deduct €191 billion of financial services debt and €30 billion of surplus cash. We add about €32 billion for pensions; €3.7 billion of diesel-related contingent liabilities; €6.2 billion for reported leases; a €0.3 billion put option on minority stakes; and about €6.3 billion for hybrid instruments. VW is one of the largest corporate issuers of hybrid instruments, with €15.5 billion of issuance. Because we consider these instruments to have intermediate equity content, we have allocated 50% to debt and 50% to equity in our debt figures.

Ratings Score Snapshot

Issuer Credit Rating

BBB+/Negative/A-2

Business risk: Satisfactory

- **Country risk:** Intermediate
- **Industry risk:** Moderately high
- **Competitive position:** Strong

Financial risk: Modest

- **Cash flow/leverage:** Modest

Anchor: bbb+

Modifiers

- **Diversification/portfolio effect:** Neutral (no impact)
- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Strong (no impact)

- **Management and governance:** Fair (no impact)
- **Comparable rating analysis:** Neutral (no impact)

Related Criteria

- General Criteria: Group Rating Methodology, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- General Criteria: Methodology For National And Regional Scale Credit Ratings, June 25, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria | Corporates | General: Methodology: The Impact Of Captive Finance Operations On Nonfinancial Corporate Issuers, Dec. 14, 2015
- 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: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria | Corporates | Industrials: Key Credit Factors For The Auto And Commercial Vehicle Manufacturing Industry, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Related Research

- Volkswagen AG Posts Encouraging Third-Quarter Results, Nov. 2, 2020
- Global Auto Sales Forecasts: Hopes Pinned On China, Sept. 17, 2020
- China Auto's Recovery Path Is Accelerating, Sept. 22, 2020

Business And Financial Risk Matrix

	Financial Risk Profile					
Business Risk Profile	Minimal	**Modest**	Intermediate	Significant	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
Strong	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
Satisfactory	a/a-	**bbb+**	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

Ratings Detail (As Of December 2, 2020)*	
Volkswagen AG	
Issuer Credit Rating	BBB+/Negative/A-2
Issuer Credit Ratings History	
26-Mar-2020	BBB+/Negative/A-2
06-Nov-2017	BBB+/Stable/A-2
01-Dec-2015	BBB+/Negative/A-2
Related Entities	
Banco Volkswagen S.A.	
Issuer Credit Rating	
Brazil National Scale	brAAA/Stable/--
Scania AB (publ.)	
Issuer Credit Rating	BBB/Negative/A-2
Nordic Regional Scale	--/--/K-2
South Africa National Scale	zaAAA/--/zaA-1+
TRATON SE	
Issuer Credit Rating	BBB/Negative/--
Volkswagen Bank GmbH	
Issuer Credit Rating	A-/Negative/A-2
Commercial Paper	
Local Currency	A-2
Senior Subordinated	BBB+
Senior Unsecured	A-
Short-Term Debt	A-2
Volkswagen Financial Services AG	
Issuer Credit Rating	BBB+/Negative/A-2
Volkswagen Finans Sverige AB	
Issuer Credit Rating	
Nordic Regional Scale	--/--/K-1
Volkswagen International Belgium S.A.	
Issuer Credit Rating	BBB+/Negative/A-2
Commercial Paper	
Local Currency	A-2

*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.