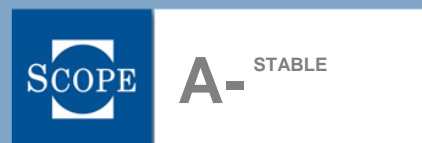


MERCK KGaA

Germany, Pharmaceuticals



Corporate profile

Merck KGaA is a diversified chemicals/pharmaceuticals group that was founded in 1668 with the opening of a Merck pharmacy in Darmstadt, Germany, where the group is still based. The Merck family holds 70% of the voting rights with the remainder in public ownership. After several acquisitions and divestments, the group now consists of three divisions: healthcare (pharmaceuticals and consumer healthcare), life science and performance materials (speciality chemicals, centred on its global market leadership in liquid crystals). In 2015, Merck acquired the US-based life science company Sigma Aldrich for USD 17bn, becoming a consolidator in that industry. In pharmaceuticals, it is a specialised, mid-sized producer of drugs, relying on two blockbuster products, Erbitux and Rebif, but has developed a new focus on immuno-oncological products, mainly represented by its antibody avelumab, already partly marketed as Bavencio. At the end of 2014, US-based big pharma company Pfizer acquired partial ownership of the molecule as well as US distribution rights for USD 850m. In 2019, Merck bought US electronic materials producer Versum Materials Inc. for about EUR 6bn to strengthen its Performance Materials division.

Key metrics

Scope credit ratios	2017	2018	Scope estimates	
			2019F	2020F
EBITDA/ interest cover (x)	13	14	14	15
SaD/ EBITDA (x)	2.7	2.1	2.9	2.5
Scope-adjusted FFO/ SaD (%)	26	29	22	26
FOCF/ SaD (%)	16	17	12	16

Rating rationale

Scope Ratings affirms its A- issuer rating on Merck KGaA (Merck). The Outlook remains Stable and the short-term rating is S-1.

The rating affirmation continues to reflect our view of Merck's credit-supportive business risk profile, which consists of the mostly stable and cash-generative business models of its three critically sized divisions. In addition, the group's diversified structure reflects the owning family's philosophy of achieving balanced cyclical exposure. Merck's Healthcare division still depends on its mature product portfolio and is continuing to transition towards a broader pharma portfolio by expanding into immuno-oncology therapies. However, recent sales trends of its key drug Bavencio (anti-PD-L1), jointly developed and marketed with Pfizer Inc, have been rather modest. To date the drug is approved for smaller indications (bladder cancer and Merkel cell carcinoma) while possible approvals for the more sizeable indications of renal cell cancer and lung cancer are expected within the next months. Bavencio is currently developed in four Phase 3 projects. Sales of Merck's new multiple sclerosis drug Mavenclad have ramped up successfully, following US approval in early 2019. This was a major breakthrough in our view, as it opened up blockbuster potential for the drug. In a crowded multiple sclerosis product market, the drug is likely to generate more than EUR 250m in revenues in its first year after approval. Further upside is provided by Merck's recent collaboration with GSK plc to jointly develop and market Merck's immuno-oncology Phase 2 pipeline project TGFbeta Trap (anti PD-L1).

Ratings & Outlook

Corporate ratings	A-/Stable
Short-term rating	S-1
Senior unsecured rating	A-
Subordinated	BBB

Analysts

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Related Methodology

Rating Methodology: European Pharmaceuticals

Corporate Rating Methodology

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The other Merck group divisions have developed in different ways over the last twelve months. Life Sciences performed very strongly after the integration of Sigma Aldrich (acquired in 2015), both in terms of sales growth and margin expansion. However, the Performance Materials division was held back by the ongoing decline in profitability caused by competitive pressure in the liquid displays sub-division. Performance Materials presently generates about EUR 300-400m less EBITDA compared to pre-2017 levels. This is likely to be mitigated by the acquisition of Versum, a producer of electronic materials, which is soon to be completed. The company had an EBITDA margin of more than 30% and is likely to contribute more than EUR 300m to group EBITDA. The ratings also reflect our view of Merck management's conservative financial policy in general. While acquiring Versum was expensive (EBITDA multiple paid of 14x), the company is highly profitable and strengthens Performance Materials' business risk profile. In addition, Merck supported the acquisition with a EUR 1.5 bn hybrid bond issuance (two tranches) with a 50% equity credit. Credit metrics are thus not overly negatively affected by the acquisition as we already expect leverage (as expressed by Scope-adjusted debt/EBITDA) of about 2.5x in 2020, which is commensurate with the ratings. In addition, management's financial policy supported quick deleveraging after the Serono and Millipore acquisitions.

Our assessment of Merck's financial risk profile continues to reflect our expectation that management is both willing and able to reduce debt continuously in the coming years. This expectation is supported by the reduction of gross financial debt by EUR 1.3bn in 2017, despite operational headwinds. However, the group's growth strategy involves budgeted increases in R&D, marketing and capital expenditures, in addition to the profit downturn in Performance Materials. Thus, in the period of slower profit growth foreseen for 2018 and 2019 – until the Healthcare division potentially starts to increase profit generation again – the divestiture proceeds for Merck's Consumer Products division are likely to be the main driver of credit metrics' improvement. In light of management's conservative financial policy, we expect the bulk of net proceeds to be available for deleveraging. For 2018, including the divestiture, we expect funds from operations (FFO)/Scope-adjusted-debt (SaD) to recover to 34% and the adjusted EBITDA-to-SaD ratio to fall to 2.1x.

Outlook

The Stable Outlook reflects our expectations that credit metrics of SaD/EBITDA of 2.5x and FFO/SaD of 30%-35% are indicative for the current rating and Outlook, translating into a financial risk profile assessment in the BBB category.

A higher rating could be triggered by an enhanced business risk assessment if the Healthcare division performs well in the future and by a sustainable improvement in credit metrics above the levels detailed previously (below 2.5x on a sustainable basis). A negative rating action could be the result of a more aggressive financial policy – which we do not foresee – or a sustained negative deviation from the ratio levels commensurate with the present ratings (SaD/EBITDA of above 2.5x and FFO/SaD of below 30%).

Rating drivers

Positive rating drivers	Negative rating drivers
<ul style="list-style-type: none"> • Diversified group structure with positive effects on internal risk balancing • World market leader in liquid crystals • Potential pharma blockbuster in development • Significant free cash flow generation • Conservative financial policy 	<ul style="list-style-type: none"> • Healthcare division in transition • Margin pressure in liquid crystals • Acquisition of Versum has depressed credit metrics slightly

Rating-change drivers

Positive rating-change drivers	Negative rating-change drivers
<ul style="list-style-type: none"> • Business risk improvements, such as successful new drug approvals • Leverage sustainably below 2.5x 	<ul style="list-style-type: none"> • Inability to delever quickly • Leverage of above 2.5x on a sustained basis



Financial overview

	Scope estimates			
Scope credit ratios	2018	2019F	2020F	2021F
EBITDA/ interest cover (x)	14	14	15	17
SaD/ EBITDA (x)	2.1	2.9	2.5	2.1
Scope-adjusted FFO/ SaD (%)	29	22	26	32
FOCF/ SaD (%)	17	12	16	19
Scope-adjusted EBITDA in EUR m	2018	2019F	2020F	2021F
EBITDA	3,538	4,162	4,515	4,905
Operating lease payment in respective year	117	0	0	0
Other	0	0	0	0
Scope-adjusted EBITDA	3,655	4,162	4,515	4,905
Scope funds from operations in EUR m	2018	2019F	2020F	2021F
EBITDA	3,655	4,162	4,515	4,905
less: (net) cash interest as per cash flow statement	-252	-260	-285	-260
less: cash tax paid as per cash flow statement	-965	-850	-1,000	-1,150
Scope funds from operations	2,438	3,052	3,230	3,495
Scope-adjusted debt in EUR m	2018	2019F	2020F	2021F
Reported gross financial debt	8,896	12,787	11,887	11,087
Hybrid bond	-745	-1,500	-1,500	-1,500
less: cash, cash equivalents	-2,194	-609	-560	-635
Cash not accessible	300	300	300	300
add: pension adjustment	1,001	1,150	1,150	1,150
add: operating lease obligations	497	0	0	0
Other	-89	-100	-100	-100
Scope-adjusted debt	7,666	12,034	11,184	10,310

Business risk profile

Three critically sized divisions

Based on its long-term commitment to diversified pharmaceuticals/chemicals exposure, Merck has built its group structure around three sizeable divisions holding, in part, significant market shares. The acquisition of US-based Sigma Aldrich for the group's Life Science division in 2015, positioned it among the top three producers of laboratory equipment and related products globally. The liquid crystals business (part of the Performance Materials division) continues to hold strong global market position despite its recently impaired profitability. Merck's pharmaceutical subdivision is a mid-sized drug producer, which has only recently been able to gain approval for novel pipeline projects ending a period of years without innovation.

We believe Merck's group structure could effectively protect group cash generation in the event of a recession or a pharmaceutical downturn caused by patent expiry. This is based on our view of both the life science and liquid crystals industries' comparatively low cyclicity and high cash flow generation. The pharmaceutical industry is generally less exposed to macroeconomic downturns. Cyclicity risk for the industry is of a more long-term nature, defined by product lifecycles and the pipeline replacement of patent-expired products.

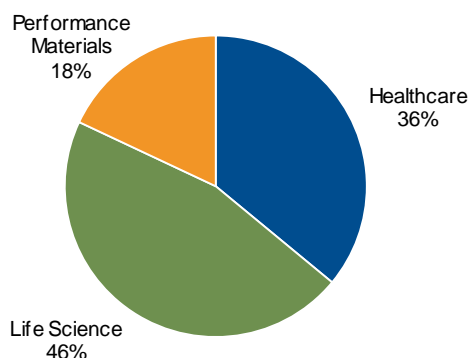
Solid business risk profile

In accordance with our corporate ratings methodology, we assess each division's business risk profile separately, taking the divisions' different characteristics into account.

By applying weights related to the divisions' individual profit contribution to the group (see Figure 1), we have determined that Merck's group business risk profile falls within the A category.

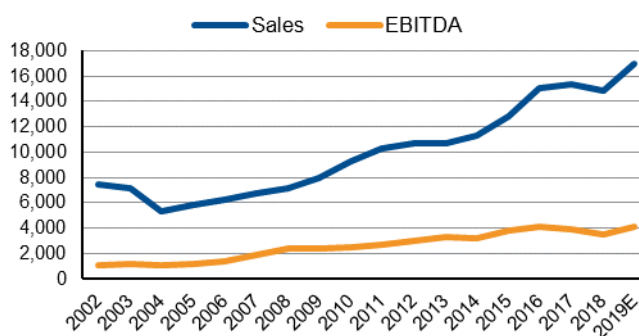
We view the mix of industries which Merck is exposed to as very credit supportive. All of the underlying industries are only very faintly exposed to macroeconomic downturns. Demand in the Life Science and Healthcare divisions is driven by ageing societies and unhealthy lifestyles, as well as innovation. The Performance Materials division generally supplies speciality products for a large number of industrial applications, making a highly negative cyclical impact less likely for the overall division.

Figure 1: EBITDA breakdown by division



Source: Scope estimates

Figure 2: Rising sales and EBITDA trends (EUR m)



Source: Scope estimates

We also believe that barriers to entry are high in pharmaceuticals (R&D, marketing expertise) and liquid crystals (technical concentration in the industry). The group's other performance material activities (pigments and electronics) shift the divisional entry barrier risk slightly downwards. However, we view the life science industry, which deals with medical equipment, as well protected by medium-risk barriers to entry due to its focus on speciality products and increasing network requirements.

Merck's competitive position weighed down by Healthcare

Merck's pharmaceutical activities suffer from an aged and comparatively small product portfolio compared to 'Big Pharma' peers. While its two mature blockbusters Erbitux (oncology) and Rebif (multiple sclerosis) are already past patent expiry in major markets, both are still holding up sales extremely well. This is important in the present transitional phase of the overall division until newly approved products can generate growth again.

First indication approvals of Bavencio (avelumab), Merck's prospective anti-PDL-1 blockbuster, and Mavenclad, its oral multiple sclerosis treatment, are positive. However, they have not yet changed our assessment of the group's competitive position in healthcare overall, as first sales generation is still comparatively low. To date, the drug is approved for smaller indications (bladder cancer and Merkel cell carcinoma) while possible approvals for the more sizeable indications of renal cell cancer and lung cancer are expected in the first half of 2020. Management still targets a peak sales scenario of up to EUR 2bn for Bavencio, Mavenclad and Tepotinib together by the end of 2022. Bavencio, which has made revenues of EUR 45 m in the first half of 2019, is currently developed in four Phase 3 projects. While healthcare margins are still mediocre in a peer context, good pipeline prospects (avelumab, TGFbeta trap, tepotinib) are credit supportive, despite the heavy focus on avelumab. However, the rating is held back by the group's small market shares and high product concentration rates, with the top three products generating 44% of pharmaceutical revenues in the first half of 2019 (compared with 27% at Sanofi, for example). Further upside for the division is provided by Merck's second collaboration with a Big Pharma peer announced in February 2019. Together with GSK plc, Merck will co-develop and co-commercialise Phase 2 pipeline project TGFbeta trap (anti-PDL-1) in immuno-oncology, after the Pfizer joint venture for Bavencio was announced in 2014.

Performance Materials: inclusion of Versum to stabilise divisional profits

The competitive position of Merck's Performance Materials division is very comfortable from a ratings point of view. This is now less firmly based on its liquid crystals exposure but also on its electronics and semiconductor positions. While operating margins for liquid crystals have fallen from above 45% to below 30%, due to increased competitive pressure and reduced innovation, the other performance materials activities are not generating significantly lower margins on average. We have slightly downgraded Performance Materials' business risk profile to reflect the lower liquid crystals profitability, which we do not expect to return to previous levels. This does not affect the group's overall business risk assessment. Merck's pigments and electronics activities (integrated circuit materials, OLEDs) diminish the division's strength somewhat from a rating perspective, but they nevertheless have good market shares and margins, attesting to the highly specialised nature of the products. Merck's acquisition of US-based Versum, a producer of electronics materials especially for the semiconductor industry, is likely to increase divisional profits to the levels attained in 2015, thus effectively replacing the lost liquid crystals margin (Versum had an EBITDA margin of 33%).

Life Sciences: strong performance

With the inclusion of Sigma Aldrich, Merck's Life Science division now ranks among the top three suppliers worldwide. All major product categories are covered (except for diagnostic instruments) and market shares are significant. We therefore regard diversification as key to our assessment of the division's competitive position. Furthermore, Sigma Aldrich's industry-leading EBITDA margin of 32% (2015) and strong cash generation are likely to drive Merck's divisional profitability going forward. In the first six months of 2019, divisional EBITDA margins improved to more than 30%, up from 28% in 2018. In addition, the division looks set to benefit from growth levels that are expected to be well above that of GDP in the medium term (+9% in the first half of 2019 on a like-for-like basis). From a geographic perspective, the Sigma Aldrich acquisition will significantly strengthen the division's US exposure within an already global structure. On

a combined basis, the division is well represented in Europe and North America, which are home to about 80% of the life science industry.

Business risk profile rated A

Based on the above and the assessment of each of Merck's three divisions from a bottom-up perspective, we affirm our A rating for Merck's business risk profile.

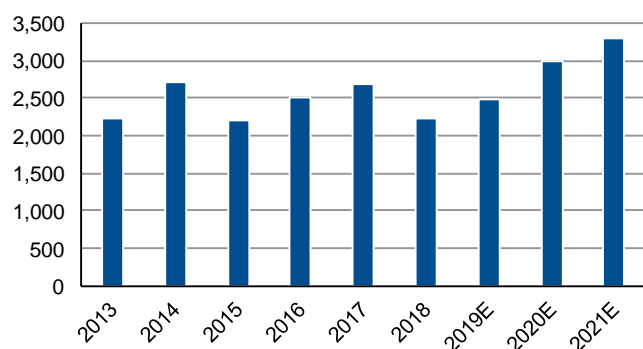
Financial risk profile

Credit metrics to improve after 2019

Merck's key credit metrics improved significantly in 2018. The Sigma Aldrich acquisition in 2015 had led to a steep increase in gross financial debt by about EUR 8bn compared with the year before, and was responsible for adjusted leverage rising above 3x, its highest historical level. Management's continuous deleveraging thereafter received an additional boost in 2018 from close to EUR 3bn in divestiture proceeds from the sale of Merck's Consumer Products division. In 2018, net financial debt was reduced by about EUR 3.5bn and credit metrics improved considerably. In 2019, management decided to acquire electronics products manufacturer Versum. The immediate impact will be a deterioration of 2019 credit metrics as this year will carry the full debt impact of the transaction, while Versum will only contribute one quarter to Merck's cash flows in the current year. Due to its high profitability, Versum is likely to fully compensate for the permanently impaired profit generation on an absolute basis in the Performance Materials division, caused by the liquid crystals shortfall from its peak-margin times.

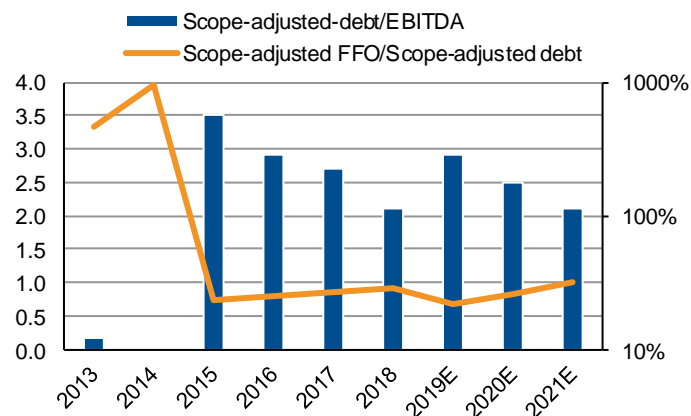
After 2019, we expect a stronger deleveraging effect, helped by the potential for revenue growth generation in all divisions as well as by management's cost focus initiative. This also includes R&D and marketing expenses in the Healthcare division. As can be seen from Figure 3 below, we expect a significant rise in operating cash flows for the next three years, enabling deleveraging and improved credit metrics.

Figure 3: Strong operating cash flow trend expected (EUR m)



Source: Scope estimates

Figure 4: Enabling continuous deleveraging



Source: Scope

Conservative financial policy

We consider Merck's financial policy to be sound and committed, as underlined by the historical deleveraging trend following acquisitions in 2012 and 2015. After the Sigma Aldrich acquisition, the group's management stated publicly that it would enter a phase of consolidation and organic growth with a focus on reducing debt quickly, not least motivated by the intention of keeping ratings stable. We have incorporated this conservative, family-backed ratings commitment into our ratings, providing a one-notch uplift.

S-1 short-term rating

We affirm Merck's short-term rating of S-1, based on its solid investment grade rating as well as our positive assessment of the group's liquidity position. The rating also reflects our perception of the group's sustainable cash-generative business model, which is likely to improve thanks to the Versum acquisition.



Financial risk profile rated BBB

Based on the above, we affirm our BBB rating for Merck's financial risk profile, assuming that financial metrics will recover after the Versum acquisition.

Outlook

The Stable Outlook reflects our expectations that credit metrics of SaD/EBITDA of 2.5x and FFO/SaD of 30%-35% are indicative for the current rating and Outlook, translating into a financial risk profile assessment in the BBB category.

A higher rating could be triggered by an enhanced business risk assessment if the Healthcare division performs well in the future and by a sustainable improvement in credit metrics above the levels detailed previously (below 2.5x on a sustainable basis). A negative rating action could be the result of a more aggressive financial policy – which we do not foresee – or a sustained negative deviation from the ratio levels commensurate with the present ratings (SaD/EBITDA of above 2.5x and FFO/SaD of below 30%).



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