SME RESEARCH REPORT

New Rating Methodology for SMEs and MidCaps in Germany

One Third of German SMEs and MidCaps with Investment Grade-like Financial Profile

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Summary

- Our analysis demonstrates that about one third of sampled German SMEs and MidCaps would be scored BBB or higher purely based on the financial profile, which is a key component of the scorecard in our new SME rating methodology published under **TRIB**Rating.
- A thorough financial profile assessment sometimes requires appropriate adjustments to be made to reported financials by credit analysts. Appropriate analytical adjustments can substantially change the final rating output.
- Business profile risk, sector profile risk and further qualitative factors need to be analysed in addition to the financial profile as part of a rating process for SMEs and MidCaps. A fulsome assessment of these forward-looking rating criteria is essential for obtaining an appropriate evaluation of a company's credit risk.
- Rigorous ratings of German SMEs and MidCaps combine a robust quantitative model and the expertise of experienced rating analysts.

One third of sampled SMEs are scored BBB or higher purely based on the financial profile

This methodology is based on our analysis of the German SME and MidCap sector and a comprehensive experience of assessing the risk of SMEs and MidCaps. Material elements of this methodology are built on data and statistics of approximately 39,000 companies with financials over the 2002 to 2015 period and revenues typically between €10 million and €500 million. Our analysis demonstrates that about one third of a sample of approximately 24,000 of the German SMEs and MidCaps whose data was used to develop the new methodology can be scored BBB or higher purely based on the financial profile, which is a key component of the scorecard in our new SME rating methodology published under **TRIB**Rating.

As part of the methodology development process, we estimate a two-year probability of default econometric model[1]. This model allows us to select those financial metrics we consider most significant for anticipating defaults[2], and to set their weights (relative importance of each metric in the financial grid) and ranges to score each individual financial metric.

While the SME rating methodology includes both quantitative and qualitative factors, the historical data analysed here speaks only to the quantitative part, and specifically to the financial profile component of the scorecard.

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[1] We estimate a two-year rather than a one-year probability of default model to maximise the number of observations, which can be used in the model estimation process and to develop a financial grid, which takes into account long-run rather than short-run effects.
[2] For the purpose of model development, we have built a default indicator that used information on legal bankruptcy as well as specific payment incidents, which together were thought to best approximate default events.

As shown in charts 1 and 2, about one third of the sampled SMEs and MidCaps were scored BBB or higher (Investment Grade area) purely on the financial profile, while the highest percentage of companies was in the BB area.

Chart 3 presents the one, two and three-year cumulative default rates by broad rating categories derived from the financial profile. Default rates generally increase with lower rating categories derived from the financial profile, indicating that the ratings derived from financial profiles are a good predictor of default risk[3].

Chart 1: Financial Scores Distribution by Broad Rating Categories

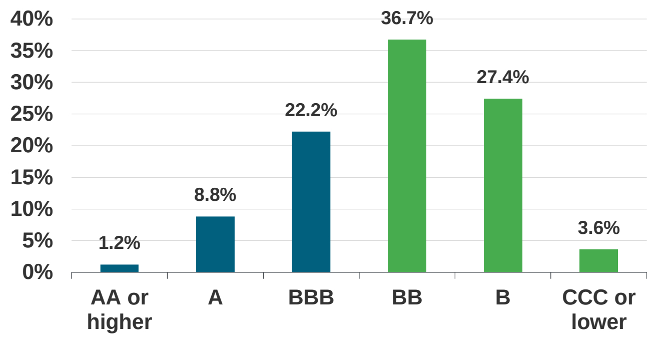


Chart 2: Financial Scores Distribution by Broad Rating Categories

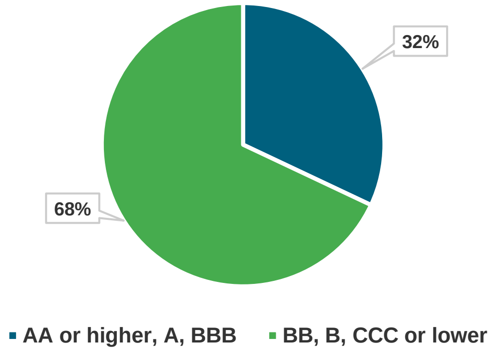
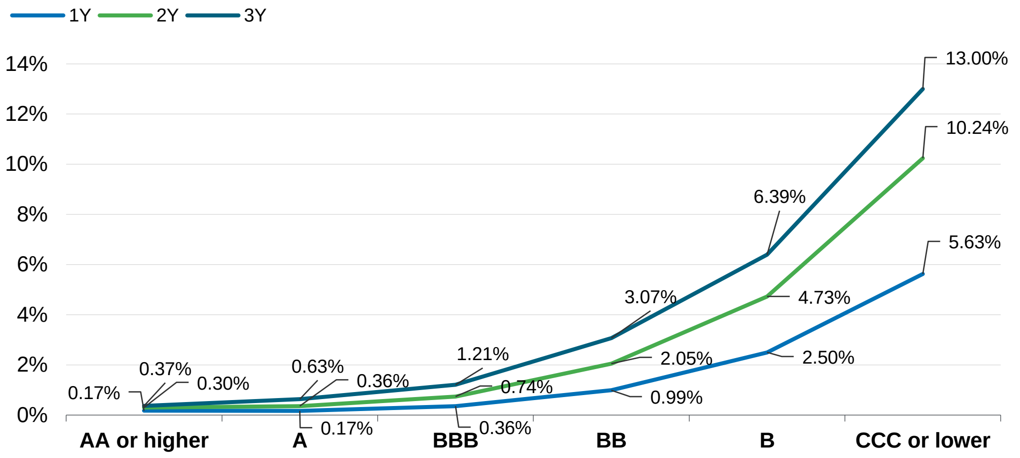


Chart 3: 1-, 2- & 3-Year Cumulative Default Rates by Broad Rating Categories Derived from Financial Profiles



To further assess how the financial profiles rank-order default risk, we calculate the average defaulter position (AP), which is a widely used measure of the discriminatory power of rating models. By this measure, the typical SME and MidCap defaulter within the sample carried a lower financial profile than 74% of all other sampled SMEs and MidCaps, two years in advance of default.

This is true across the different samples. Adding the qualitative layer of the methodology to the financial profile is thought to further improve the methodology's discriminatory power.

[3] The only exception is the AA or higher default rate for the in-sample being higher than the single-A default rate. This is due to the small number of SMEs and MidCaps rated AA or higher.

Analytical adjustments as an essential prerequisite for the rigour of the SME and MidCap ratings

Analytical adjustments are a material element for the assessment of the financial profile

Financial profiles of SMEs and MidCaps are assessed based on company size, profitability, leverage, capitalisation and interest coverage. A financial profile assessment, however, also requires appropriate analytical adjustments to be made to the balance sheet, income statement and cash flow statement. These analytical adjustments can have a significant impact on the outcome of the analysis and thus the final rating output.

Most balance sheet adjustments are based on two questions. First, are reported assets such as goodwill fully recoverable, or are they impaired? Second, do analytical adjustments need to be made to the capital structure in order to appropriately calculate economic capital?

Analytical adjustments to income statements generally reflect our view of the sustainability and operational significance of income and expense items. When adjusting cash flow statements, analysts may reclassify certain items so that they more accurately reflect the economic reality of the individual cash flows.

Potential impacts of analytical adjustments on SME and MidCap ratings

Analytical adjustments can increase or decrease the financial profile score compared to an analysis purely based on raw financial data. The two following scenarios illustrate the possible impacts of adjustments. Each company in the scenario is assumed to have a BB financial profile score based on the raw financial data.

Example: Analytical adjustments

Company 1	Company 2
Company 1 funds part of its operations with mezzanine capital, which is reported as a liability on the balance sheet. Owing to its contractual construction, this financing instrument qualifies as economic capital according to the methodology's criteria, requiring an analytical adjustment to the manner in which the company's capital structure is input into the credit assessment. The company's other operating expenses include material extraordinary one-off restructuring expenses relating to a discontinued operation. The analyst adjusts these expenses and reclassifies them as an extraordinary item. The analytical adjustments with respect to model inputs thus cover not only the company's capital structure, but also its profitability, deleveraging potential and interest coverage ratios, which are all part of the scorecard considerations. As a result of the adjustments, the financial profile score in this scenario increases from BB (unadjusted) to BBB-, which is investment grade.	Company 2 has recognised a significant amount of goodwill in its balance sheet following an acquisition made in the previous year. However, the rating analysts do not believe that these intangible assets are fully recoverable and apply a 20% haircut to them. Other operating income includes proceeds from the disposal of plant, property and equipment in a sale and lease-back transaction. That means the item is not connected to the company's operational business. In this company's case, there would also be analytical adjustments with respect to model inputs covering the company's capital structure, profitability, deleveraging potential and interest coverage ratios, which are all part of the scorecard considerations. The financial profile score in the second scenario decreases from BB (unadjusted) to B+, reflecting an increased default risk.

Overall, the two scenarios show that appropriate analytical adjustments may substantially affect ratings.

Thorough assessment of the forward-looking rating criteria to further improve the quality of the SME and MidCap ratings

Once the financial profile has been analysed, the business risk, sector risk and other qualitative factors are analysed as part of the rating process. A thorough assessment of these forward-looking rating criteria is essential for obtaining a robust evaluation of a company's credit risk. Analysts rating SMEs and MidCaps need an in-depth understanding of the specific characteristics of these types of companies.

Assessment of the Business Profile

Business risk is determined by assessing the company's competitive position and concentration risk, which we view as the main sub-factors for the business risk of SMEs and MidCaps.

The competitive position is analysed by qualitatively assessing a company's current and future positioning in its industry, based on its business properties, particularly with respect to direct competitors. Other factors include the company's size relative to its competitors, its current and expected market share, the extent of its product/service range and its cost position and/or ability to control costs.

The assessment of concentration risk assumes that companies with multiple business segments and a broad product range generally have more stable revenue streams than competitors with a tighter business focus. Concentration risk is assessed based on a multi-dimensional assessment of potential concentration risks (segments, regions, customers, suppliers).

Assessment of the Sector Profile

The sector risk of SMEs and MidCaps is mainly determined by assessing sector volatility and sector outlook. We place considerable importance on the assessment of the sector volatility since each sector responds differently to fluctuations associated with economic, market or innovation cycles.

The medium-term sector outlook also figures prominently in the sector risk assessment since we view changes in sector conditions as likely to affect the creditworthiness of SMEs and MidCaps.

Assessment of the Notching Factors and Other Rating Considerations

The four notching factors – liquidity, debt structure, strategic and operational management, and governance and financial policy – cover rating drivers that are not included in the financial, business and sector risk assessments because they are not fully scalable. Adjustments based on notching factors can either lower the final rating, have no rating effect whatsoever or – in extremely rare cases – increase the rating. Notching adjustments reflect the rating analysts' opinion on the impact these factors could have on the company's future performance.

Other rating considerations include legal structure / external factors, reporting and transparency, event risks and other limiting factors.

It is clear that a thorough assessment of qualitative criteria that accounts for the specific characteristics of SMEs and MidCaps plays an important role in obtaining a robust, forward-looking assessment of these companies' credit risks.

Example: Assessment of the forward-looking rating criteria

Company 1	Company 2
Company 1's extraordinary restructuring expenses relate to a highly volatile discontinued operation in a market that was forecast to shrink over the medium term. So even though the discontinuation made the company less diversified, this strategic move ended up improving its sector profile overall. In this scenario, the forward-looking assessment of qualitative factors raises its rating one notch to BBB compared to the financial profile assessment.	The goodwill that Company 2 reports relates to the prior-year acquisition of a company that has a relatively weak competitive position due to its small size and small market share. The company also has a very limited customer base, making it very dependent on individual customers. According to the assessment of qualitative factors, Company 2's acquisition has increased its business risk overall and so its rating drops one notch from the financial profile assessment to B.

New SME Rating Methodology applies to small and medium-sized non-financial corporates

The new SME rating methodology published under TRIBRating, a brand of Euler Hermes Rating GmbH, is a new rating methodology that applies to small and medium-sized non-financial corporates in Germany. This rating methodology includes a scorecard, which is a reference tool that can be used to explain the factors that are considered most important in assigning ratings to SMEs and MidCaps.

The scorecard contains a grid with three broad factors: two are qualitative, the Sector Profile and Business Profile, and one is quantitative, the Financial Profile. These three broad factors, which have one or more sub-factors, are complemented by four notching adjustments. The financial profile, also referred to as to the financial grid or quantitative grid, comprises several sub-factors, which are all measured using ratios and metrics constructed from an issuer's financial accounts.

The methodology is based on an extensive data pool of German SMEs and MidCaps

The initial dataset had ca. 39,000 distinct German SMEs and MidCaps over the period 2002 to 2015, with sales typically between € 10 million and € 500 million, and default markers included. Conditional on having financial accounts two years prior to default, the number of distinct companies was reduced to ca. 37,000. We further reduced the sample by excluding additional SMEs in order to preserve the distribution of the original sample by broad risk categories (as assessed by separate risk measures). This working sample had ca. 24,000 distinct SMEs and MidCaps. In order to conduct an out-of-sample robustness test, we further divided this sample into two-thirds ("in-sample") and one third ("out-of-sample"): the distributions by rating categories were found to be robust, i.e. very similar across the different sub-samples (for details, see EH Rating's latest Validation Study, which can be found on our website at https://www.ehrg.de/en/).

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