DEUTSCHE BUNDESBANK
EUROSYSTEM

How the Bundesbank assesses the credit standing of groups which report under International Financial Reporting Standards (IFRS)

Eligibility assessment

As part of Eurosystem monetary policy operations, it is possible for commercial banks to submit credit claims as collateral for refinancing operations at the Deutsche Bundesbank. For this, the borrowing enterprises must be considered **"eligible"**. This is examined in a credit assessment conducted by the Bundesbank. Enterprises can ask to be credit-assessed even if a credit claim in which they are the debtor is not submitted as collateral. In either case, the Bundesbank provides the enterprise with all the results of the credit assessment.

Due to their lack of separate legal personality, groups cannot themselves be the debtor in a credit claim submitted as collateral. However, the outcome of a particular group's credit assessment has a strong bearing on the assessment of the individual enterprises belonging to that group.

A description of the procedure for assessing groups reporting under the International Financial Reporting Standards (IFRS) is given below. A separate leaflet outlines the procedure used to analyse single and group entities reporting in accordance with national generally accepted accounting principles (German Commercial Code (HGB))
(available at https://bundesbank.de/content/811976).

The aim of a credit assessment system is to estimate a group's one-year probability of default (PD) on the basis of financial statements as precisely and reliably as possible. For that purpose, statistical methods are used to select the ratios which, when combined, are best able to predict the PD of a group.

Model development process: consensus approach

IFRS annual financial statements are analysed using what is known as a **consensus approach.** This approach is based on the assumption that every group has a "true" credit assessment that cannot be observed directly but can instead be estimated by statistically processing multiple rating sources (external credit assessment institutions and banks' internal ratings-based (IRB) systems). The model development process comprises two phases.

– Replication of external ratings using a ratio-based model
Phase one uses a ratio-based model based on annual financial statements data to replicate, for every group, the rating information available from external credit assessment institutions and banks using the internal ratings-based approach (IRB banks). A combination of ratios is sought that explains as best possible the external and internal ratings for all financial statements included in the calibration. Around 70 ratios are included in the selection process. The ratios that are ultimately selected should deliver forecasts of the highest possible quality and cover various mutually independent aspects, e.g. capital structure, profitability, liquidity.

– Validation and recalibration
In phase two the ratio-based model is validated on the basis of defaults observed in the past as defined in Article 178 of the Capital Requirements Regulation (CRR) by assessing whether the model-estimated PDs match actual default rates. Significant mismatches result in the ratio-based model being adjusted to ensure that the model is both "as close to the market as possible" and delivers high-quality PD forecasts. By calibrating the model in this way, it is therefore possible to forecast a group's credit quality even if current external rating information is not available for that group.

Ratios

Two types of ratios are set out in the "outcome of the credit assessment":

– Model ratios
These are selected as part of the model development process. In combination, they deliver the best possible PD forecasts. The model is recalibrated annually, so different model ratios might be selected each year.

– Additional ratios
These are "classic" ratios which are generally of interest in the context of financial statement analyses, and they are also used in expert analysis to evaluate a group's relative market position and trends. The four additional ratios selected are shown in the following table.

Ratios	Focus	Statement
Model ratios	**Included in PD calculation**	
Self-financing ability	Retained earnings	Financing ability through annual profit
Net financial liabilities ratio	Financial liabilities less liquid funds	Percentage of financial leverage not covered by liquidity
Adjusted EBIT (earnings before interest and taxes)	Operating profit or loss	Size indicator for resistance to insolvency
Return on sales before fair value changes	Profit or loss before tax less fair value changes	Ability to generate profit
Capital interest burden	Interest expenses	Interest burden for debt
Return on cash flow	Cash flow from continued activities	Liquid funds available for investment, repayments, etc.
Additional ratios	**Consideration in expert analysis**	
Equity ratio	Equity	Financial stability and independence, ability to absorb losses
Profit margin	Profit or loss before tax	Ability to generate profit
Debt repayment capacity	Debt	Repayment of liabilities through operating cash flow
Liquidity ratio	Cash and cash equivalents	Future liquidity

Source: Deutsche Bundesbank

The credit assessment process

– Model proposal

In the first stage, the system initially calculates a classification proposal on the basis of the ratio-based model for the group to be assessed.

– Final credit rating

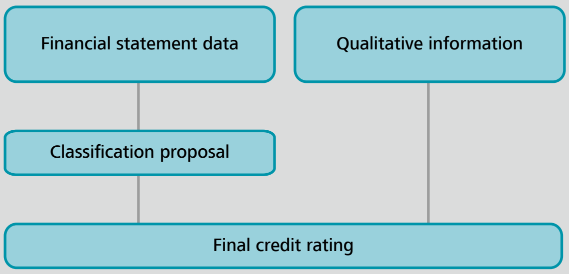
In the second stage, the analyst identifies and examines additional quantitative and, in particular, qualitative information relevant for assessment. This is current information and robust business factors that are not contained in the ratio-based model. This also includes reports provided by credit institutions to the German and European credit register concerning individual enterprises belonging to the group. Moreover, special factors and non-recurring effects that might have affected the ratios are taken into account.

In addition, the analyst considers other important aspects, such as information on management quality, the assessment of market position and market opportunities/risks, industry conditions, dependence on customers or suppliers and third-party opinions as well as sustainability factors.

All available information is used for an analysis that, to ensure a holistic assessment of the group, covers strategic, financial and profitability-related aspects.

The final credit rating consists of an expected PD value ranked by a **rating class** on a scale of 1 to 8 (between 2+ and 7-, in notches). IFRS groups achieving a rating class between 1 and 4- are certified as being “eligible”. Rating class 8 is reserved for defaulted groups (transferred from the parent undertaking). The table on the back of this leaflet shows how the Bundesbank’s rating scale roughly compares with the scales used by the external credit assessment institutions authorised within the Eurosystem credit assessment framework.

Stages in the credit assessment process



Source: Deutsche Bundesbank

Outcome of the credit assessment – overview and explanatory notes

The first page of the "Ergebnisse der Bonitätsanalyse" (outcome of the credit assessment) provides an overview of the respective group's results. This shows the group's position in relation to groups in the same sector on the basis of a sector-related quartile analysis of the ratios, which allows conclusions to be drawn about company-specific strengths and weaknesses.

The ratios for three consecutive years are presented in a table to highlight changes over time. The table shows the relevant individual figures for the reporting group and the comparable figures for the median and the indicator. The **indicator** is the position of the group-specific ratio within the value range of the associated sector. The median lies in the exact middle of this value range. The indicator is expressed as follows where the ratio hypothesis "the higher, the better" is used:

-- below the first quartile,
- between the first and the second quartile (median),
+ between the second quartile (median) and the third quartile,
++ above the third quartile.

Thus, a group with an indicator of +, for example, ranks among the best 50% of the respective sector.

For the "net financial liabilities ratio" and "capital interest burden" ratios, the order of the quartile value indicators is reversed.

Due to the small pool of underlying data on available IFRS consolidated financial statements, a relatively rough breakdown into sectors has to be used when determining the quartiles.

The overview page is supplemented by charts depicting the group's capital structure, financial position and results of operations over the last three years assessed.

The overview is followed by a page of explanatory notes on the depicted ratios and indicators.

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Credit rating classifications of the Deutsche Bundesbank and external credit rating agencies authorised in the Eurosystem

Credit rating	Eligible		Not eligible		
Eurosystem credit quality steps (CQSs)	1 - 2	3	4	5	6 - 8
Probability of default (PD)	PD ≤ 0.10 %	PD ≤ 0.40 %	PD ≤ 1.00 %	PD ≤ 1.50 %	PD > 1.50 %
Deutsche Bundesbank	**1/2+/2/2-/3+/3/3-**	**4+/4/4-**	**5+/5**	**5-**	**6+/6/6-/7+/7/7-/8**
DBRS Morningstar	AAA/AAH/AA/AAL/AH/A/AL	BBBH/BBB/BBBL	BBH	BB	BBL/BH/B/BL/CCC/CC/C/D
FitchRatings	AAA/AA+/AA/AA-/A+/A/A-	BBB+/BBB/BBB-	BB+	BB	BB-/B+/B/B-/CCC/CC/C/RD/D
Moody´s	Aaa/Aa1/Aa2/Aa3/A1/A2/A3	Baa1/Baa2/Baa3	Ba1	Ba2	Ba3/B1/B2/B3/Caa1/Caa2/Caa3/Ca/C
Standard & Poor´s	AAA/AA+/AA/AA-/A+/A/A-	BBB+/BBB/BBB-	BB+	BB	BB-/B+/B/B-/CCC/CC/C/SD/D
Scope Ratings	AAA/AA+/AA/AA-/A+/A/A-	BBB+/BBB/BBB-	BB+	BB	BB-/B+/B/B-/CCC/CC/C/SD/D

Source: Deutsche Bundesbank