Credit Research Methodology

We base our bond valuation conclusion on an estimation of an issuer's risk profile and subsequently on structuring and bond-specific features of the issue.

The issuer risk profile comprises a combination of a business risk profile and a financial risk profile. We estimate the quality of the business risk profile by taking into account a broad array of different factors influencing the issuer's operating profile. In general, we prefer stable earnings with limited potential up/downside to volatile earnings. Although bond investors benefit from strong performance, they have close to full exposure if a company comes into problems that threaten its debt-servicing capabilities.

An assessment of an issuer's business risk profile includes, but is not confined to, an estimation of the following.

- **Company size:** the bigger the company, the better suited it will be to weather potential downturns.
- **Diversification:** having a broad-based income and asset base is a credit advantage. Having exposure to many different geographical regions, products and business segments reduces idiosyncratic risks related to any single product or region.
- **Competitive position:** aggressive competitors can erode profitability through price wars or alternative product or service offerings.
- **Profitability:** if the issuer enjoys a cost advantage, this bodes well for margins and future scope for outperformance compared with competitors.
- **Barriers to entry:** issuers with advantageous properties, such as embedded clients, proprietary knowledge, significant non-reversible capital investments, natural monopoly type assets, or other key features that are not easily replicated, often enjoy a low risk of new competition.
- **Client bargaining power and supplier bargaining power:** an issuer that has the upper hand in price setting for input costs or end-product prices can extract better margins. This could, for example, be in the form of high supplier competition or a highly customised end-product.
- **Technological advantages:** an issuer that possesses valuable technological advantages that cannot easily be copied by potential competitors either because of complexity or because of intellectual property rights/patents, enjoys a competitive edge compared with potential competitors.
- **Technological threats:** an issuer's product or service offering could become threatened if alternative products or services emerge on the back of technological innovation from competitors.
- **Political opportunities:** changes in political focus areas, such as, for example, a heightened environmental focus, can support the future earnings profile if an issuer is positioned favourably towards such agendas through its products or services.
- **Political risks:** an issuer's product or service can be threatened, or its cost profile deteriorate as a function of legislative changes such as, for example, increased

taxation, duties, decommissioning requirements, requirements of additional safety/environmental investments, fines or expropriations.

- **Geopolitical risks:** an issuer can experience declining sales as a function of the eruption of wars, civil unrest, crime, nationalisation, trade embargoes or excise duties.
- **Management:** an experienced management team reduces the risk of adverse business decisions.
- **Market analysis:** we assess the market in which the issuer is active and analyse whether the market is growing, mature or in decline. We also analyse the general macroeconomic landscape in which the issuer operates.
- **Corporate social responsibility (CSR):** a company with a weak CSR profile has an increased risk of negative media coverage with subsequent potential negative knock-on effects on demand. A strong CSR profile is generally positive, as it reduces negative event risk and suggests that the company is well positioned for long-term changes in the business environment.
- **In addition to the business risk profile analysis**, we also analyse the issuer's financial risk profile by focusing on the following items.
- **Credit metrics:** we assess the issuer's debt-servicing capabilities by focusing on various different debt coverage metrics such as net debt to EBITDA, FFO to net debt, FFO interest coverage and FCF to net debt. We also investigate general profitability as well as return on equity and income composition. For capitalisation, we use leverage ratios such as net debt to equity and equity to total capitalisation. For banks in particular, we use risk-weighted capital ratios. When assessing metrics we make various adjustments to the issuer's reported numbers. We generally seek to adjust for off-balance sheet funding like items and add these back to the balance sheet and add back their effect to the P&L statement.
- **Liquidity:** we make a liquidity analysis, assessing the issuer's cash sources versus cash needs in the coming 12 months, i.e. the risk of an issuer running out of cash in the short term. Here we assess the cash sources by adding cash and equivalents on the balance sheet, the expected next 12-month cash flow from operations and committed undrawn credit facilities. This should exceed capex, dividend payments/share buybacks and short-term debt maturities over the next 12 months.
- **Insurance:** we also assess whether the issuer is adequately insured against adverse events towards its assets.
- **Hedging:** an issuer with commodity or currency exposure often hedges this. We prefer high hedge levels to low levels, as this yields higher short- to medium-term cash flow visibility.
- **Financial policy:** from a credit perspective, we prefer an issuer with a conservative and credible financial policy. This includes a low payout ratio to shareholders and/or a conservative leverage target. We also assess whether such policies have been adhered to historically.
- **Governance:** we seek to assess the governance structure of the issuer, i.e. whether the board of directors has a balanced influence on the company vis-à-vis the executive management. We also assess whether there is a history of risky strategic decisions or other credit-negative dispositions by management.
- **Owners:** we assess the controlling owners of the issuers, i.e. if the owner is supportive in terms of being able and/or willing to help the issuer in case of

financial hardship, or if the owner is reliant on cash flow from the issuer, making it unable to help in crisis periods or even prone to extract cash from the issuer, which could further amplify a crisis.

- **Combining the financial and business risk profiles,** we arrive at an issuer risk profile. We combine this with an analysis of bond-specific issues to arrive at an issue risk profile. In this analysis, we consider the following.
- **Structural subordination:** if a bond is issued out of a holding company and a daughter company exists that has all or most of the operating activities, the debt issued at the holding company is structurally subordinated debt issued out of the daughter company. In essence, this gives rise to expectations of a lower recovery value in a liquidation scenario.
- **Contractual subordination:** if the issuing entity of an unsecured bond has also issued other debt with pledges in the issuer's assets, this will also mean a lower recovery rate for the unsecured bondholder in a liquidation scenario (asset encumbrance).
- **Seniority:** a bond that by definition ranks behind other debt, such as hybrids, AT1s, tier 2s, etc. will also receive a lower recovery value in a liquidation scenario.
- **Security:** a bond can also have pledges, meaning that it will probably have a higher recovery value in a liquidation scenario.

Common for all the structuring issues listed above is that we use such considerations to assess the loss given default and subsequently what spread premium this should render.

- **Bond documentation:** a bond sometimes has specific issues that can make it more or less valuable compared with a plain vanilla bond. This could be covenants such as change of control provisions, covenants stipulating certain leverage levels, which, if breached, could imply liquidation or limitations on management's actions. It could also be call or put provisions linked to certain events.

Having done the above analysis, we arrive at an overall bond risk profile. We compare the bond spread with those of peers with similar risk profiles and against this background, we estimate whether the bond is attractively priced in the market. We express this view with an Overweight, Marketweight or Underweight recommendation. This signals our view on the bond's performance potential compared with that of relevant peers in the coming six months.