SCOPE Ratings

Construction and Construction Materials Rating Methodology

Corporates

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1. Introduction

[1] This methodology is the latest update of the Construction and Construction Materials Rating Methodology, which details Scope Ratings' approach to rating construction and construction material companies. This methodology supplements our General Corporate Rating Methodology and supersedes it in case of conflict, inconsistency or ambiguity.

[2] This update only contains non-material changes:

i) Provision of typical information and data sources used in the analytical process;

ii) Editorial changes.

2. Scope of application

[3] We define construction and construction materials corporates as companies which generate most of their revenues and EBITDA from the construction of residential and non-residential buildings, infrastructure/civil engineering (e.g. for transport infrastructure and energy- and environment-related construction), industrial construction (e.g. of power plants and oil platforms), related services (e.g. architecture and engineering), the management of concessions of infrastructure assets, and the production of construction materials (i.e. heavy building materials such as cement, concrete, and bricks, as well as lightweight materials such as insulation, glass and gypsum).

[4] This definition excludes companies which derive the majority of their revenues from real estate development, which encompasses activities ranging from the renovation and re-leasing of existing buildings to the purchase of raw land and the sale of improved land or parcels to other parties. These companies are considered real estate corporates, for which we apply our European Real Estate Rating Methodology.

3. The construction and construction materials industry

[5] The construction industry is fragmented, composed of many small, local companies and a few large companies that gained size only over the last 20 years. Micro and small enterprises (fewer than 50 employees) account for almost two-thirds of the European market, mostly focused in the construction of residential and non-residential buildings. We believe this market fragmentation reflects low market entry barriers that are the result of initial investments being low and proprietary technologies not being needed to enter local markets.

[6] Even though, construction and construction materials companies need to continuously invest in property, plant and equipment to remain competitive, they are less capital-intensive than companies in other industries. Furthermore, large construction companies often have better access to third-party capital and letters of credit, which are often necessary for large projects and are an advantage during difficult market conditions and competitive bidding processes. Scale is therefore a main rating driver for companies in this industry.

[7] Companies that are diversified across different segments have a variety of business models. Diversification outside the construction industry is rare and often limited to small divisions operating in real estate development, renewable energies and utilities. We identify six main segments in construction:

1. Buildings and small civil engineering
2. Infrastructure and civil engineering
3. Industrial construction
4. Construction-related services
5. Concessions
6. Construction materials

[8] As a result of the industry's cyclicality, most market participants tend to extend operations outside their domiciled country. Different construction cycles in other regions help to mitigate the inherent volatility in the domestic market and allow corporates to benefit from stronger growth prospects elsewhere. We believe construction investments follow general economic cycles but with a time lag, and this particularly applies to large-scale projects.

[9] For construction and construction materials companies to be rated investment grade according to our methodology, we would typically expect: i) a large scale combined with strong competitive position; ii) a stable presence in different geographic regions; and iii) broad segment diversification. Cash flows of investment grade companies tend to be highly predictable and less volatile than the economic cycle, due to the multi-year projects and backlog. These companies benefit from stable profitability and strong financial measures.

[10] Compared to other segments, concession-related activities tend to generate predictable, long-term income and high margins.

[11] In contrast, a small size, weak competitive position compared to international peers, and weak geographical and segment diversification can indicate a non-investment grade rating. The cash flows of non-investment grade companies tend to be less predictable, less diversified and more volatile. Furthermore, these companies often have volatile profitability and weaker financial measures.

[12] The industry's high cyclicality makes it challenging for construction and construction materials companies to achieve high investment grade ratings.

4. Information/Data sources

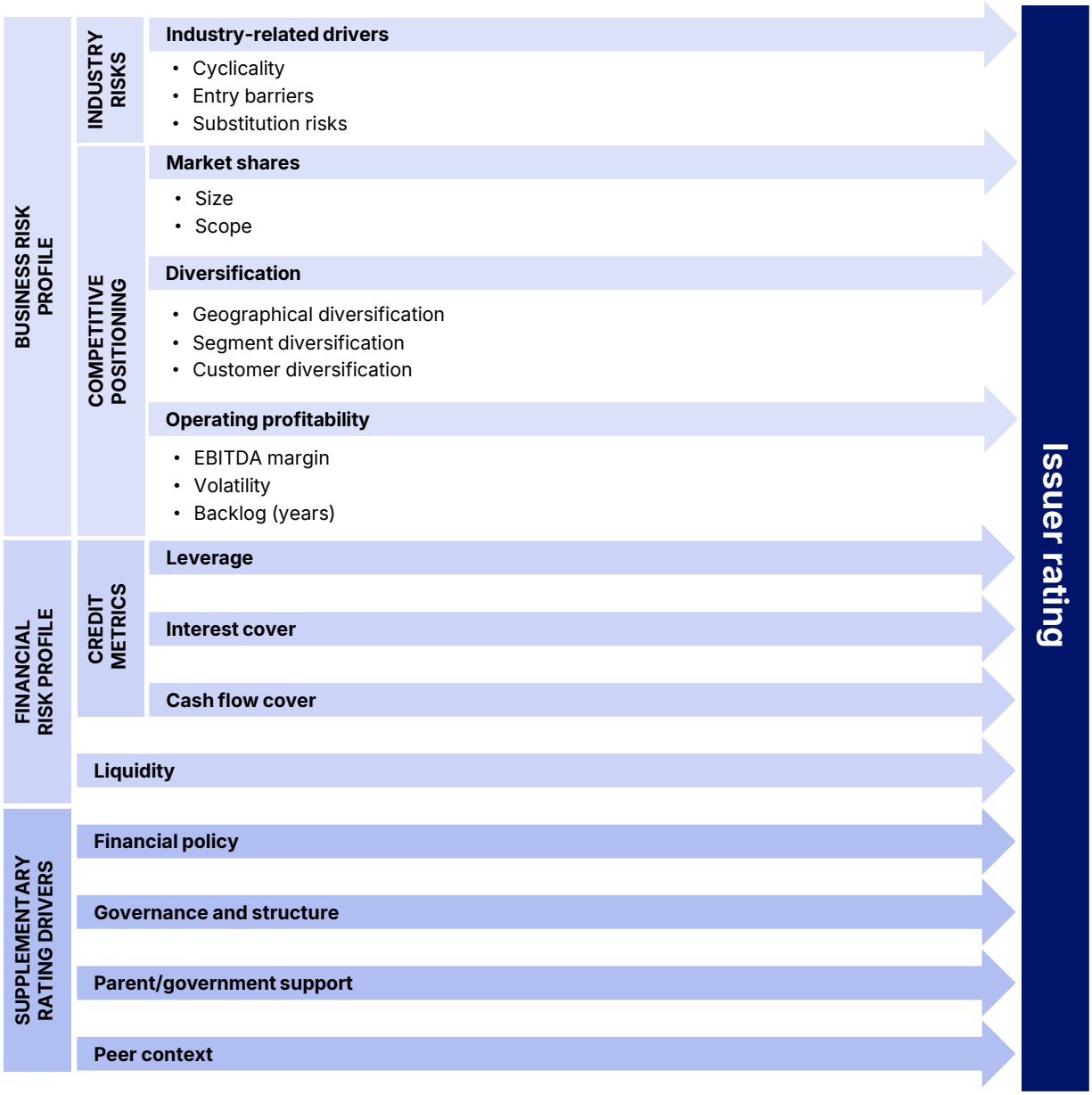
[13] In the analytical process Scope typically takes into account the following sources of information. Not all of the listed information will be considered for every rated entity. Moreover, Scope may consider additional sources of information if necessary.

- Audited financial statements
- Unaudited interim financials
- Press releases
- Presentations and information from conference calls/Capital Market Days
- Financial forecasts/budgeting of the rated entity, if available/accessible
- Research on the industry, rated entity and relevant jurisdictions
- Data from external data providers, e.g. consensus estimates, debt placements
- Management meeting (in case of issuer participation)
- Loan documentation, e.g. debt prospectuses, bank loan agreements
- Valuation reports from external assessors
- Scope internal data, e.g. spreading of historical financials and detailed forecasts for the next few years, peer group data, credit views on the captive finance business

5. Key Components

[14] We apply our rating methodology for construction and construction materials corporates as outlined in Figure 1. The rating analysis specific to this sector addresses factors common to all industries such as management, liquidity, legal structure, governance and country risks. The following business risk and financial risk indicators are non-exhaustive and may overlap; some may not apply to certain corporates. We may add issuer-specific rating factors, and a company's business model is decisive for the applicable indicators. No rating driver has a fixed weight in the assessment. Please refer to the General Corporate Rating Methodology for more detail.

Table 1: General rating grid on construction and construction materials corporates



5.1 Business risk profile

[15] When evaluating the business risk profile, we analyse the industry dynamics and business drivers that are unique to construction and construction materials companies. Our two-fold approach analyses the business risks for the industry and the competitive positioning of the company.

5.1.1 Industry-related drivers

[16] We assess the industry fundamentals of construction and construction materials corporate by examining the following industry drivers:

- Cyclicality/government fiscal policy
- Entry barriers
- Substitution risks

Cyclicality/government fiscal policy

[17] The construction industry is often associated with cyclical features, especially compared to industries with inelastic demand patterns.

[18] We consider a company's exposure to economic developments that may result in a downside volatility of cash flows. Downside volatility can arise from either: i) volume risks from a high exposure to buildings, industrial construction and public/government customers; or ii) risks from price fluctuations for materials, labour and energy, and typically little room to adjust pricing for existing contracts. We believe that a high proportion of concession-related business can help to weather economic downturns and stabilise operating performance.

[19] Unlike companies in other industrial sectors, construction corporates can have large exposures to government customers, making them more vulnerable to changes in fiscal policy. Even so, the last financial crisis (2007-2008) affected European construction output much less than building construction, as government spending and fiscal policies continued to address public infrastructure needs (which in turn has stimulated civil engineering).

Entry barriers

[20] We consider the entry barriers vary depending on the business model and end-markets served.

[21] The building segment tend to have low entry barriers as initial investments are low and proprietary technologies are not needed to enter local markets.

[22] Civil engineering is generally more capital-intensive and often requires letters of credit. We therefore view market entry barriers as medium. Only large companies with good access to third-party capital can participate in these predominantly large-scale projects. Large-scale industrial projects such as the construction of power plants, oil platforms and refineries have high entry barriers as specialised proprietary technologies are often required.

[23] For construction materials companies specifically, the ability to enter the market requires a certain level of initial capital expenditure (e.g. for manufacturing plants), manufacturing know-how, access to distribution channels and customer relations and, in some cases, the acquisition of permits (mainly for basic building materials companies). However, entry barriers can differ given the fragmented structure of the industry and the broad spectrum of company sizes and product types. Entry barriers for large manufacturers such as materials companies (e.g. cement) are high owing to the large initial expenditure needed for manufacturing plants. On the other hand, entry barriers for small producers of finished products tend to depend on manufacturing know-how rather than large upfront expenditures.

Substitution risk

[24] Substitution risk is low as technologies are unlikely to replace the industry's role in addressing the need for new commercial and residential buildings, maintenance work, and heavy and civil engineering (e.g. for railway tracks, bridges, highways, tunnels, airports and other functional, capital-intensive ventures). This area of construction will continue to be fuelled by population growth, globalisation and urbanisation. However, substitution risk is medium for producers of finished goods impacted by global trends such as sustainability and energy-efficiency.

[25] Companies covering construction segments, except for concessions, are generally exposed to high cyclicality. Therefore, the aspects differentiating these companies – market entry barriers and substitution risk – mainly depend on project size, end-

markets served, and technical prerequisites for specific project types such as offshore sites, tunnelling and innovative construction materials. However, companies with a large share of concession-related and service businesses may be able to lower their cyclical exposure and thus reduce their industry risk.

Table 2: Our industry risk assessment on Construction and construction materials sub-segments

Cyclicality \ Entry barriers	Low	Medium	High
High	1 CCC/**B**	2+5 B/**BB**	3 BB/**BBB**
Medium	B/BB	4 BB/**BBB**	BBB/A
Low	BB/BBB	BBB/A	A/AA

Source: Scope Ratings

[26] We assign the following industry risk levels, depending on certain factors:

1. Buildings and small civil engineering projects, B industry risk: corporates focusing on small to medium-sized construction projects with high cyclicality, low entry barriers and low substitution risks; the same applies to companies focusing on small industrial and civil engineering projects. We consider that a company is focused on small civil engineering projects when its portfolio comprises more than 75% of projects with an individual contract value of below EUR 50m.
2. Infrastructure and civil engineering, BB: construction companies in infrastructure and civil engineering focusing on medium- to large-scale projects with high cyclicality, medium entry barriers and low substitution risks.
3. Industrial, BBB: industrial construction companies that benefit from high entry barriers and low substitution risk as they focus on large-scale and heavy industrial construction that requires specialised proprietary technologies.
4. Concessions, BBB: concessionaires that benefit from medium barriers to entry, generally medium cyclicality and low substitution risk.
5. Construction materials, BB: companies that focus on end-markets (e.g. new construction and maintenance) with different cyclicality patterns and that benefit from medium barriers to entry and low substitution risk.

[27] Construction-related services, B to BBB: corporates that provide services focused on existing structures and/or construction planning; they typically have the same industry risk (B to BBB) as the construction activity they are up- or downstream of.

[28] Due to construction and construction materials companies' high exposure to the economic cycle, the business risk profile is a key indicator of their credit quality over time. It indicates the extent to which a company's competitive positioning protect against adverse market movements and build entry barriers, providing a clear view of long-term viability.

5.1.2 Competitive positioning

[29] According to our General Corporate Rating Methodology, the competitive position of a construction and construction materials company is assessed through the following drivers:

- Market shares
- Diversification
- Operating profitability

Market shares

[30] For construction and construction materials companies, size and market position determine market strength and the ability to benefit from economies of scale. A large size can also provide a broader platform of sustainable earnings and cash flow, thereby increasing the ability to weather economic cycles.

[31] We assess a company's size using revenue and Scope-adjusted EBITDA, which indicate economies of scale as well as competitive advantages in bidding wars and the profitable execution of large, long-term and complex projects. Large size often correlates with solid diversification in geographies, segments and customer types.

[32] Companies operating in concessions generally benefit from regulations and a monopoly-like structure in their service territories, which help to protect their market positions against large competitors. This is especially important as many operate at a limited scale. In such cases, we anchor our market share assessment at 'BBB' in line with the segment's industry risk. For example, if a

company generates more than 50% of EBITDA from concessions, we apply a floor to the market share assessment at 'BB'; for companies that generate 25%-50% of EBITDA from concessions, the floor is at 'B'.

[33] We also assess market shares by considering how well and long operations are protected in the respective construction market.

Table 3: Market shares by rating category

Market position		AA and above	A	BBB	BB	B	CCC and below
Size	Revenue (EUR bn)	> 18.0	9.0 to 18.0	6.5 to 9.0	3.3 to 6.5	0.1 to 3.3	< 0.1
	Scope-adjusted EBITDA (EUR bn)	> 7.2	1.8 to 7.2	1.0 to 1.8	0.25 to 1.0	0.0 to 0.25	Negative

Diversification

[34] The range of geographies and segments in a portfolio form the key elements of diversification. Both elements influence a company's earnings volatility, which can be affected by cyclical swings, changes in competition and project performance. Diversity across several continents and/or economic regions as well as an exposure to a number of uncorrelated segments can mitigate earnings volatility.

[35] We measure the geographical diversification of construction and construction materials companies as the percentage of revenue generated in a specific geographical region[1]. A wide spread of activities across various geographical regions with different demand patterns or cyclical exposures tends to reduce cash flow volatility. This, however, depends on whether the company's foothold in absolute terms ensures a long-term commitment to these non-core markets. A wide geographical diversification is a positive rating factor.

[36] Segment diversification is assessed using e.g. the percentage of revenues, diversification of generated EBITDA or operating profit within the segments. As the economic cycle affects segments differently, spreading activities across various segments tends to reduce the volatility of cash flow and reduce cyclicality in the portfolio. Moreover, a large share of concession-related activities can offset the cyclicality inherent to the construction industry as they can provide a high cash flow resilience.

[37] The share of the largest customers in sales and/or the backlog provides an indication of the stability of cash flow going forward. A granular customer base generally supports more stable cash flow, with limited cluster risk arising from non-payment, project delays, loss of contracts and/or weaker order intake. In the absence of relevant disclosures on an issuer's customers, we generally base our view on project diversification.

[38] We consider long-term contracts with high-credit-quality customers to strongly mitigate high customer or geographic concentration.

Table 4: Diversification by rating category

Diversification	AA and above	A	BBB	BB	B	CCC and below
Geographical diversification	Reflects global market		Global but unbalanced presence	Overreliance on one region	Operates in one region	Operates in one country
Segment diversification	No segment with > 30% of revenue/EBITDA	No segment with > 40% of revenue/EBITDA	No segment with > 70% of revenue/EBITDA; 3-4 segments	No segment with > 70% of revenue/EBITDA; two segments	> 70% of revenue/EBITDA from one segment	> 90% of revenue/EBITDA from one segment
Customer diversification Top 10 (%)	< 10		10 to 20	20 to 50	50 to 90	> 90

[1] We identify the following seven global regions: Europe, North America, Latin America, Oceania/Australia, Asia, Africa and the Middle East.

Operating profitability

[39] For construction and construction materials companies, we use the Scope-adjusted EBITDA margin (in %) and the backlog (in years) to measure the profitability, efficiency and visibility of revenues and margins into the medium term.

[40] Scope-adjusted EBITDA margins depend on the segments in which the company operates and its pricing power within them. Concession contracts tend to provide higher margins because operations are protected by the concession holder's quasi-monopoly and benefit from lower operating and maintenance expenses. However, many concession contracts require large upfront capital expenditure.

[41] We evaluate the volatility of the Scope-adjusted EBITDA margin to determine the stability of internal financing as well as sustainable competitive advantages, especially when the margin is high. High margins may also indicate entry barriers that help to sustain the profitability of companies already in the market. High vertical integration generally results in more stable profitability as it reduces reliance on external providers and improves the ability to control costs. High vertical integration is evident in a company that produces its own raw materials, converts these into finished goods and distributes the goods to customers.

[42] We examine each company's existing order backlog[2] to form a view on its future revenue stability. A high order backlog indicates that future orders are well protected. We recognise that many companies, particularly those that serve utilities, have significant future revenue streams due to master service agreements. We forecast revenue streams when data is sufficient, although these are generally difficult to quantify and not reported in the backlog.

[43] For concession-related activities, we use the weighted average concession length as a proxy for the stability of future cash flow. A longer concession length is credit positive, as it results in a high level of predictability of future.

[44] For construction material companies, we may complement our revenue forecasts and volatility thereof by assessing the medium- to long-term changes in the utilisation rate of their production facilities.

[45] Also the book-to-bill ratio can inform us on the predictability of potential demand and stability of cash flows. A ratio greater than 100% implies that more orders have been received than filled in a year. It may indicate strong demand and ability to generate new business, hence future revenue streams, enhancing a company's credit quality. We view this as a positive rating driver. In contrast, a ratio below 100% implies weaker demand, impacting stability and predictability of a contractor's cash flow generation.

Table 5: Operating profitability by rating category

Profitability	AA and above	A	BBB	BB	B	CCC and below
EBITDA margin (%)	> 40	20 to 40	14 to 20	7 to 14	0 to 7	Negative
Margin volatility	Low to medium		Medium		High	
Backlog (years)	> 8	6 to 8	4 to 6	2 to 4	1 to 2	< 1

[2] Backlog is the amount of work (in euros) contracted in the future. Our ratio captures the relation between the order backlog and average revenue in the last three years.

5.2 Financial risk profile

[46] Our assessment of a construction and construction materials company's financial risk profile follows the general guidance presented in our General Corporate Rating Methodology. We focus on recent and forward-looking data including (but not limited to) key parameters like leverage, interest cover and cash flow. We also assess liquidity, which is particularly important for non-investment grade issuers.

[47] The financial risk profile indicates a company's financial flexibility and viability in the short to medium term. A company with a strong financial risk profile is more likely to be resilient to economic downturns, adverse industry dynamics, unfavourable regulation or an unexpected loss of a revenue source. The ability to retain financial flexibility during an economic downturn is a rating driver for construction and construction materials companies as it indicates an ability to invest at all phases of the economic cycle.

5.2.1 Credit metrics

[48] We assess the financial risk profile of construction and construction materials companies using the same four credit metrics in the Corporate Rating Methodology. For further information and definitions, see General Corporate Rating Methodology.

[49] Our calculation of Scope-adjusted debt excludes non-recourse loans (such as for project finance concessions) held by special purpose vehicles unless we consider that a company has some willingness to support these loans or if they include cross-default clauses. Our assessment of such a willingness is based on the company's market reputation, for which we use the business risk profile as a proxy. A stronger business risk profile, generally for investment grade companies, indicates a higher likelihood that the company will provide support in order to preserve its reputation. We generally assess the sensitivity of credit metrics to determine their resilience if a company holds non-recourse loans, assuming different levels of potential support for those loans.

5.2.2 Liquidity

[50] We do not perform a sector-specific assessment of a construction or construction materials company's liquidity, except when we assess:

1. Funding of working capital: construction companies generally have high and volatile working capital requirements during project cycles. We determine whether these cash outflows are adequately covered by committed, undrawn credit facilities for working capital and unrestricted cash positions.
2. Non-recourse debt: Construction companies tend to finance capital-intensive concession activities with debt issued by special purpose vehicles (non-recourse project finance). Our calculation of short-term debt for the liquidity assessment generally excludes non-recourse loans held by special purpose vehicles unless we consider that a company has some willingness to support these loans or if they include cross-default clauses.

[51] To better quantify liquidity risk, we may also consider a company's use of reverse factoring, especially for those with a non-investment grade financial risk profile. This follows our view that the termination of reverse factoring arrangements at a time of stress is likely to lead to significant working capital outflow over a matter of months, maybe even weeks. The General Corporate Rating Methodology provides further detail on how reverse factoring is incorporated in the credit analysis.

[52] Our general assessment of liquidity is outlined in the General Corporate Rating Methodology.

5.3 Supplementary rating drivers

5.3.1 Financial policy

[53] Our assessment of financial policy as part of the supplementary rating drivers is described in the General Corporate Rating Methodology.

5.3.2 Governance and structure

[54] Our assessment of governance and structure as part of the supplementary rating drivers is described in the General Corporate Rating Methodology.

5.3.3 Parent/government support

[55] Our assessment of parent support as part of the supplementary rating drivers is described in the General Corporate Rating Methodology. When assessing parent support related to a government shareholder, we apply our Government Related Entities Methodology.

5.3.4 Peer context

[56] Our assessment of peer context as part of supplementary rating drivers is described in the General Corporate Rating Methodology.

5.4 Environmental, social and governance (ESG) assessment

[57] Credit-relevant environmental and social factors are implicitly captured in the rating process, while corporate governance is explicitly captured at the 'governance and structure' analytical stage (see 5.3.2).

[58] The rating analysis focuses on credit quality and credit assessment drivers. An ESG factor is only credit-relevant when it has a discernible and material impact on the issuer's cash flow, and, by extension, its overall credit quality.

[59] The following ESG risks are the most relevant for construction and construction material companies: i) waste and sustainable building materials; ii) efficient technology; iii) employee health and safety; and iv) litigation, bribery and regulatory risk.

[60] ESG-related risks are generally issuer- or jurisdiction-specific and range from market risk, e.g. energy prices, to regulatory intervention, e.g. CO2 emission allowances. Thus, credit-relevant ESG factors will be taken into account at the issuer level.

[61] Credit-relevant ESG factors can directly and indirectly affect all elements of the business risk profile, financial risk profile and supplementary rating drivers.

[62] The General Corporate Rating Methodology provides further detail on how ESG factors and supplementary rating drivers are incorporated in the credit analysis.

6. Issuer rating

[63] The final issuer rating is based on our analysis of the business risk profile, financial risk profile and supplementary rating drivers. The rating committee decides on the relative importance of each rating driver. The business risk profile and financial risk profile are generally weighted equally for companies perceived as crossovers between investment grade and non-investment grade. The business risk profile is typically emphasised for investment-grade companies, while the financial risk profile is mostly the focus of ratings assigned to companies that are perceived as having high yield credit profiles. However, the latter also depends on the financial risk profile. Less focus is granted to strong financial risk profiles of companies showing a weak/vulnerable business risk profile (in the B or low BB category) since for such companies, the financial risk profile is subject to higher volatility. This takes into account that the credit rating of companies with business risks that reflect weak or moderate credit quality should not be bolstered by a temporary strong financial risk profile. Hence, the weighting between the business risk and financial risk profiles is adapted to each issuer's business model and market(s).

7. Additional methodology factors

[64] For more details on our rating Outlooks for corporate issuer ratings, long-term and short-term debt ratings, the recovery analysis see the General Corporate Rating Methodology.

8. Appendix

8.1 Related documents

[65] For more information, please refer to the following documents:

- General Corporate Rating Methodology
- European Real Estate Rating Methodology
- Government Related Entities Rating Methodology
- Credit rating definitions

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