

# CRISIL's approach to financial ratios

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## Executive summary

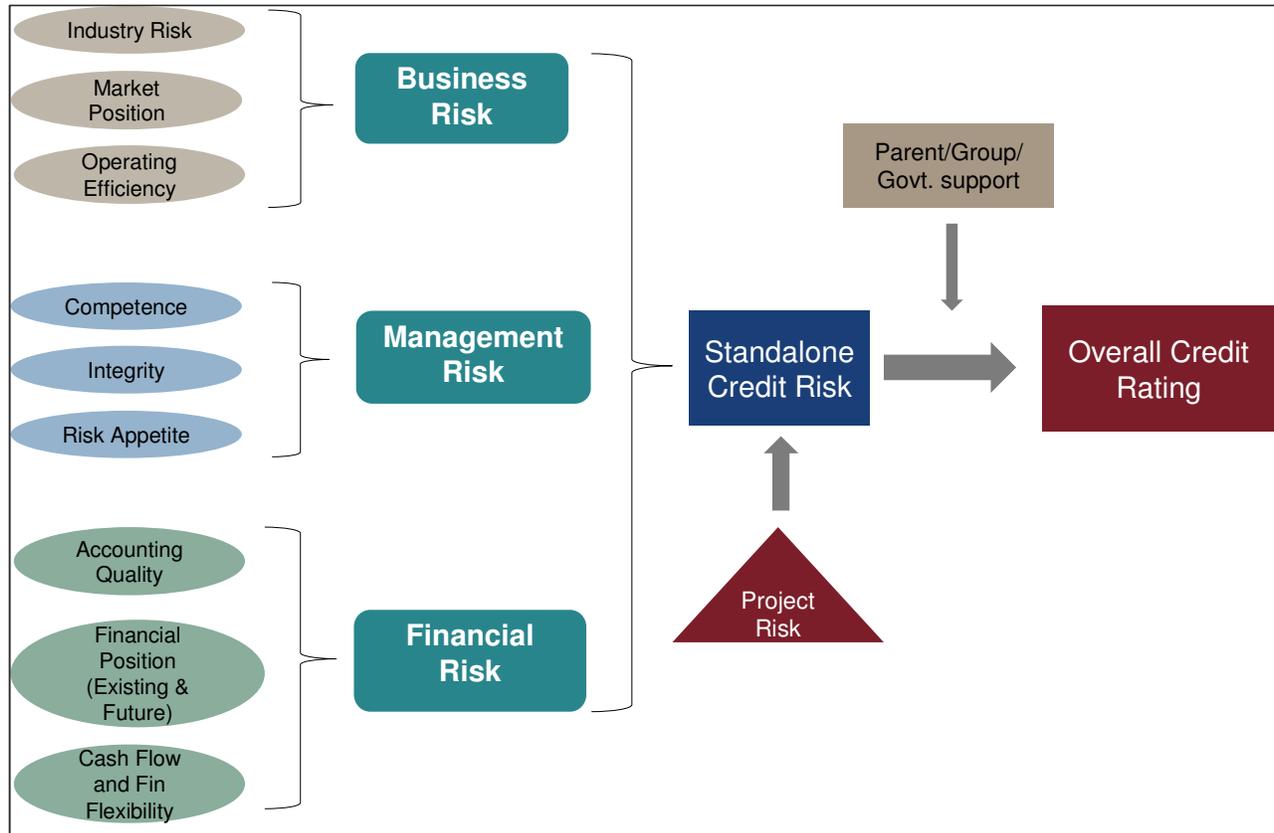
The analysis of a company's financial ratios is core to CRISIL's rating process as these ratios help understand a company's overall financial risk profile. CRISIL considers eight crucial financial parameters while evaluating a company's credit quality: capital structure, interest coverage ratio, debt service coverage, net worth, profitability, return on capital employed, net cash accruals to total debt ratio, and current ratio. CRISIL considers present as well as future (projected) financial risk profile while assessing a company's credit quality. These parameters give an insight to the company's financial health and are factored into the final rating. However, the final rating assessment entails the interplay of various other factors such as financial flexibility, business risk, project risk, management risk, as well as support from stronger parent /group /government.

## Scope and Objective

This article focuses on the key ratios that CRISIL uses in its rating process for manufacturing companies. These ratios are also used, with minor variations if necessary, in analysing logistics providers, construction companies, and a majority of services sector companies. However, for some sectors such as traders, real estate and educational institutions, CRISIL uses specific financial parameters such as risk coverage ratio, cash buffer ratio and adjusted debt service coverage ratio to assess financial risk because they capture the nuances of these sectors better. The rating criteria for these sectors is available on CRISIL's website.

This article aims to explain CRISIL's approach to financial ratios and the formulae employed to compute them. This is beneficial to users of CRISIL Ratings, including investors in corporate debt. Credit rating is not determined solely on the basis of financial ratios. Among other factors that play a key role in determining credit ratings are industry risk evaluations, operating efficiency, market position, management risk evaluation, financial flexibility, project risks, and support from a strong parent. The financial ratios indicated here are used as inputs in rating financial risk, which, in turn is factored into the overall assessment of a company's credit quality.

**Chart 1: Use of Financial Risk Analysis in Rating Decisions**



The relative importance of the ratios may vary on a case-specific basis. CRISIL does not adopt an arithmetic approach in using these ratios while assessing financial risk; instead, CRISIL makes a subjective assessment of the importance of the ratios for each credit. A detailed discussion on each of the eight parameters is presented below:

## Capital Structure

A company’s capital structure--commonly referred to as gearing, leverage, or debt-to-equity ratio--reflects the extent of borrowed funds in the company’s funding mix. The equity component in the capital employed by a company has no fixed repayment obligations; returns to equity shareholders depend on the profits made by the company. Debt, on the other hand, carries specified contractual obligations of interest and principal. These will necessarily have to be honored, in full and on time, irrespective of the volatility witnessed in the business.

A company’s capital structure is invariably a function of the strategy adopted by its management. Although high dependence on borrowed funds (and thus, high gearing) may result in a higher return on shareholders’ funds, it translates into high fixed costs in terms of the interest burden, which may adversely affect the company’s financial position. In fact, in situations of weak business performance, high gearing may weaken profitability, constraining a company’s ability to repay debt. Gearing, therefore, denotes the extent of financial risk taken by a company: the larger the quantum of debt, the higher the gearing, and the more difficult it will be for the company to service its debt obligations.

A credit rating informs investors about the probability of timely servicing of the rated debt obligation. Therefore, financial risk in the form of high gearing adversely affects an entity's credit rating. The rating also depends on the mix of business and financial risks borne by the entity. For instance, entities that are highly susceptible to industry cycles, such as sugar and cement companies cannot afford high gearing. On the other hand, companies in stable industries may choose to operate with higher debt without unduly straining their financial position.

**CRISIL computes gearing using the following formula:**

$$\text{Gearing} = \text{Total debt} / \text{Tangible net worth}$$

In total debt, CRISIL includes all forms of debt, such as short-term and long-term, off-balance-sheet liabilities, preference shares, subordinated debt, optionally convertible debentures, deferred payment credit, and bills discounted. Guarantees, receivables that have been factored, pension liabilities, derivatives, and contingent liabilities are some off-balance-sheet items that are evaluated. In case of guarantees or loans extended, the company may have considerations such as operational linkages or strategic interest, which may drive the level of support to the entity. CRISIL assesses the likelihood of devolvement of such liabilities and recoverability of exposures, including management intent, while calculating gearing.

CRISIL's analysis assesses the true and tangible net worth of a company; therefore, revaluation reserves and miscellaneous expenditures that have not been written off are excluded from the reported net worth. Intangible assets and goodwill are assessed for their intrinsic worth on a case-specific basis. If the goodwill is generated during an arm's-length transaction (amalgamation or consolidation), then it is amortized over its useful life or 5 years (whichever is shorter). In case of an acquired intangible such as patents, trademarks, or license, it is amortized over the useful period of life or 10 years (whichever is shorter). Instruments such as compulsorily convertible preference shares, share application money, and fully (and compulsorily) convertible debentures, are treated as part of the tangible net worth.

CRISIL excludes provisions for deferred tax liability (DTL) from calculations of tangible net worth. DTL represents timing differences in tax on book profits and on profits computed under the Income Tax Act; these differences are expected to be reversed eventually, and hence, constitute an outside liability. Though the time frames for the reversals are uncertain, CRISIL believes that DTL represents the taxman's funds and not the shareholder's.

**Box 1: Treatment of unsecured loans (USL) from Promoters**

Computation of debt and equity has its nuances, especially in the context of promoter/family owned unlisted entities where a sizeable portion of promoter funds deployed in the firm's business could be in the form of unsecured loans.

These unsecured loans are infused either by promoters or family members and are usually subordinated to external debt. Over the years, CRISIL has observed that this source of funds has demonstrated a high degree of permanence in times of distress and also promoters have deferred interest payments on these loans in order to prioritize the servicing of external debt obligations. Further, unsecured loans from promoters in case of promoter-owned, unlisted entities are largely viewed as promoter source of funding by lenders and considered subordinate to all other forms of external debt obligations.

Hence, even though as per accounting conventions, unsecured loans are considered as part of debt, the aforementioned factors render some equity-like characteristics to these instruments.

CRISIL, as part of its analytical treatment of USL, classifies them into one of the following:

- Part of overall debt
- May exclude unsecured loans from computation of debt
- In some circumstances, CRISIL accords partial equity treatment of up to 75% of USL, while remaining portion is considered as debt.

The above analytical treatment of USL depends on the following factors:

1. **Subordination to external borrowings:** This is an important factor taken into consideration when evaluating the analytical treatment of USL. Having a subordination feature means servicing interest and other obligations on USL are lower in order of priority compared with external debt repayment obligations. Hence, this feature provides a cushion to external debt holders to withstand the impact of losses or in the event of liquidation. USL that's not subordinate to external borrowings is considered as having debt-like features.
2. **Track record of commitment:** CRISIL looks at the track record of unsecured loans being retained in the entity to assess their permanence characteristic. It also analyses the factors on the basis of which it evaluates the likelihood of the USL being retained in the business over the near to medium term. A long track record of unsecured loan being retained in business and low withdrawals, as well as the expectation of same being continued in medium term, are characteristics that are considered positive when evaluating the analytical treatment of USL.
3. **Interest rates:** Interest rate charged on USL is also an important parameter when evaluating analytical treatment. Higher the interest rate charged on the unsecured loan, lower is the retention of profits, which lowers the cushion available to service external debt obligations. This brings these loans closer to debt than equity. Furthermore, a substantially higher interest rate charged on USL than the average market borrowing rate of the entity could indicate, in some situations, the possibility that promoters have leveraged in their personal capacity, i.e., availed of external loan to infuse funds in the entity, which strengthens the case for debt-like treatment.
4. **Deferability/ploughback of interest payments:** In times of distress, if promoters have demonstrated ability to defer interest payment on USL, it indicates a strong commitment to maintain funds within the entity and is considered positive. Further, a track record of promoters having consistently ploughed back interest by infusing additional USL in the entity, as well as the expectation of same being continued in medium term, is considered positive when evaluating the analytical treatment for USL.

CRISIL also looks at total indebtedness ratio while analyzing the capital structure. This ratio becomes especially important when a large quantum of entity's liabilities is non-fund based – such as letter of credit (LC) facility to pay off creditors. CRISIL also considers this ratio while analyzing companies that have relatively weaker bargaining power with their suppliers. Such entities are limited in their ability to stretch creditors. Term liabilities as well as current liabilities are accounted while assessing total indebtedness. Hence, CRISIL looks at indebtedness ratio to get a more holistic picture of the capital structure of the entity. CRISIL computes the total indebtedness ratio as follows:

**Total Indebtedness Ratio = Total Outside Liability / Tangible Net Worth**

## Interest coverage

Interest coverage represents the extent of cushion that a company has for meeting its interest obligations from surplus generated from its operations. The interest coverage ratio, therefore, links a company's interest and finance charges to its ability to service them from profits generated from operations. This ratio is important to the rating process because the rating reflects the entity's ability to service its debt obligations in a timely manner. This implies that the company should generate adequate income for it to be able to meet its interest obligations, even if business prospects were to turn adverse. Thus, companies with a higher interest coverage ratio can absorb more adversity, and are more likely to pay interest on time; therefore, by definition, they are less likely to default. Interest coverage is a consequence of a company's profitability, capital structure, and cost of borrowings.

For businesses that have an intrinsically low profit margin, a high interest burden – either on account of high gearing or high cost of funds, or both – may adversely affect the interest coverage ratio, and therefore the rating.

CRISIL computes the interest coverage ratio as follows:

**Interest coverage ratio = Profit before depreciation, interest, and tax (PBDIT<sup>1</sup>)/ Interest and finance charges**

Interest and finance charges refer to the total interest payable by the company during the financial year under assessment; this includes the interest component of lease liabilities, non-funded capitalized interest<sup>2</sup>, and also preference dividend.

## Debt-service coverage ratio

The debt-service coverage ratio (DSCR) indicates a company's ability to service its debt obligations, both principal and interest, through earnings generated from its operations. The textbook definition of DSCR assumes that debt repayment gets higher priority over working capital expansion. In practice, however, the priority is often reversed: working capital funding takes priority over other payments. Hence, CRISIL uses a modified version of the ratio: the cash debt-service coverage ratio (CDSCR). This ratio assumes that 25 per cent of the incremental net working capital will be funded through cash accruals prior to meeting debt obligations; it is assumed that the remainder will be financed through working capital borrowings from banks.

According to the definition of DSCR, a ratio greater than 1 time implies that an entity would be able to service its debt in a particular year from cash accruals generated during that year. On the other hand, an entity with a ratio less than 1 time may have insufficient cash accruals during the year to meet all debt obligations, and hence, has a higher probability of default. CRISIL, however, views a low DSCR in conjunction with the company's financial flexibility, because:

- Debt instruments of long tenure are not popular in the Indian market. Hence, debt contracted for a project is often of a shorter tenure than the payback period of the project. This implies that the company will refinance maturing debt with fresh debt, and not necessarily with cash accruals.
- A growing company will constantly require debt to meet its business needs. The company may not use all of the cash it generates to repay debt, but would, instead, plough part of it back to expand capacities or increase business size. The company will then use fresh debt (or equity) not only to refinance maturing obligations, but also to finance part of the capacity expansion. This is particularly true for Indian companies that are in rapid expansion mode.
- Temporary shortfalls in cash accruals in a year may result in a DSCR of less than 1 time. However, the company may tide over the exigency by using its financial flexibility to borrow fresh loans to repay existing loans. CRISIL recognizes that companies need to refinance debt. Hence, low DSCRs may not necessarily have an unfavorable impact on ratings; the company's ability to replace its existing debt with fresh funds may act as a balancing factor.

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<sup>1</sup> CRISIL in its computation of PBDIT includes recurring non-operating income, however excludes one time, extra ordinary income or expense.

<sup>2</sup> Non-funded capitalised interest relates to financing costs due to borrowed funds attributable to construction or acquisition of fixed assets for the period up to the completion of construction or acquisition, which are not funded as part of the project cost. Typically, these arise when the project faces time and cost overruns, and the contingencies built into the project cost are exhausted.

The equation for calculating CDSCR is as follows:

**CDSCR = [Profit after tax + Depreciation + Interest charges – 25 per cent of incremental NWC<sup>3</sup>] / [Debt payable within one year + Interest and finance charges]**

Debt payable within one year primarily constitutes the present portion of long-term debt (the portion of long-term debt that is slated to mature during the ongoing year), and short-term debt obligations (debt that has an original tenure of less than one year, but excluding debt that is normally rolled over, such as working capital bank borrowings and commercial papers).

## Net worth

A company's net worth represents shareholders' funds that do not have fixed repayment or servicing obligations, and thus provides a cushion against adverse business conditions. As explained earlier, CRISIL calculates the tangible net worth after adjusting for revaluation reserves and miscellaneous expenditure that has not been written off. The tangible net worth, therefore, represents the true equity that is available for absorbing losses or temporary financial problems. CRISIL believes that a company's net worth is a reflection of its size; therefore, net worth constitutes an important parameter in credit risk assessment. A large net worth usually reflects the company's strong market position and economies of scale; it also enhances financial flexibility, including the company's ability to access capital markets. A strongly capitalized company will thus be more resilient to economic downturns; in CRISIL's experience, all other parameters remaining the same, a large company is less likely to default than a smaller one.

## Profit margin

Profit margin broadly indicates both a company's competitive position in an industry, and the industry's characteristics in terms of the strength of competition, pricing flexibility, demand-supply scenario, and regulation. A company's profit performance is a good indicator of its fundamental health and competitive position. Profit margin, observed over a period of time, also indicates whether a company can sustain its present cash accruals. A profitable company exhibits the ability to generate internal equity capital, attract external capital, and withstand business adversity. From a rating point of view, the profit after tax (PAT) margin, that is, the ratio of PAT to operating income is an important profitability ratio. Although other ratios such as operating profit before depreciation, interest, and tax (OPBDIT) to operating income, or operating profit before tax (OPBT) to operating income, are also evaluated, these ratios tend to be influenced by industry-specific characteristics, and hence, do not lend themselves to comparison across industries. A high PAT margin offsets, to some extent, the effect of business risk and the corresponding financial risk. However, when used in evaluating low-value-added industries such as trading, the PAT margin also tends to have industry-specific characteristics. This is appropriately factored in while analyzing such industries.

The PAT margin is defined as follows:

**PAT margin = Profit after tax / Operating income**

To smooth out fluctuations, CRISIL uses three-year moving average PAT margin.

## Return on capital employed

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<sup>3</sup> Incremental NWC refers to Incremental Net Working Capital

Return on capital employed (RoCE) indicates the returns generated by a company on the total capital employed in the business. The ratio comprehensively indicates how well the company is run by its managers, and is unaffected by the extent of its leveraging or by the nature of its industry. A consistently low RoCE reflects the company's poor viability over the long term. CRISIL uses a three-year moving average RoCE in order to iron out the impact of short-term deviations and evaluate trends.

RoCE is computed as:

$$\text{RoCE} = \text{Profit before interest and tax (PBIT)} / [\text{Total debt} + \text{Tangible net worth} + \text{Deferred tax liability}]$$

## Net cash accruals to total debt

The net cash accruals to total debt (NCATD) ratio indicates the level of cash accruals from the company's operations in relation to its total outstanding debt. Looked at from a different perspective, the inverse of this ratio reflects the number of years a company will take to repay all its debt obligations at present cash generation levels. The ratio is computed as follows:

$$\text{NCATD} = [\text{PAT} - \text{Dividend} + \text{Depreciation}] / \text{Total debt (short and long term, including off-balance-sheet debt)}$$

## Current ratio

The current ratio indicates a company's overall liquidity. It is widely used by banks in making decisions regarding the sanction of working capital credit to their clients. The current ratio broadly indicates the matching profiles of short- and long-term assets and liabilities. A healthy current ratio indicates that all long-term assets and a portion of the short-term assets are funded using long-term liabilities, ensuring adequate liquidity for the company's normal operations. (refer CRISIL's opinion piece 'Common Myths about Current Ratio' for further information on how and why CRISIL uses this ratio.)

The current ratio is computed as follows:

$$\text{Current ratio} = \text{Current assets (including marketable securities)} / \text{Current liabilities (including current portion of long-term debt i.e. CPLTD)}$$

Besides these ratios, CRISIL also considers inventory days and receivable days. Inventory days indicate time required for a company to convert its inventory into sales, whereas receivable days represent the company's collection period. CRISIL also analyses gross current assets (GCAs) days, which is another important financial parameter. It is an indicator of working capital intensity of the company. It indicates how quickly a company is able to convert its current assets into cash. CRISIL computes the GCA days as follows:

$$\text{Gross current assets days} = \text{Total current assets related to operations} / \text{operating income}$$

**Box 2: Analytical treatment on account of migration to Indian Accounting Standards (Ind AS)**

The migration to Indian AS, which was initiated in the financial year 2016-17, is expected to lead to better disclosures and bring financial statements closer to economic reality. These accounting changes will, however, not impact business fundamentals and underlying cash flows of an entity. CRISIL has always made adequate analytical adjustments to the reported financials of rated entities to reflect their accurate financial position and factored them in its analysis. Hence CRISIL does not envisage any major changes in CRISIL's analytical treatment on account of revision in accounting standards.

For a more detailed understanding on the impact of Ind AS, please refer to CRISIL's article titled 'Ind AS Impact' available at [www.crisil.com](http://www.crisil.com)

## Conclusion

While the eight parameters mentioned above are crucial in analyzing a company's credit quality, they do not by themselves capture the company's financial health in its entirety. To assess a company's overall financial risk profile, CRISIL also takes into account the company's track record and projections on a number of other financial parameters. Strong financial flexibility, the ability to access capital markets, and stable cash flows, may, to an extent, compensate for poor financial ratios. On the other hand, a company's strong financial risk profile may be overshadowed by a weak or declining business risk profile. CRISIL's analysis considers these aspects while assigning credit ratings. However, CRISIL does not perform a forensic analysis of financial statements; audited results from the starting point for credit assessments. The final rating assessment, therefore, is a complex exercise and involves an assessment of not just financial risks but also of other key risk elements such as business, project, parentage, and management.

### **About CRISIL Limited**

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