CHAPTER-1
INTRODUCTION

The players of the investment market believe in various categories of evaluations of the market as a whole and of individual financial vehicles. The results of evaluations (either done by individuals or by any recognized body at national or international levels) provide the right direction to investment decision making, counseling, suggestions and managing the portfolios. One of the evaluation techniques is popularly known as ‘Credit Rating’ for the last more than 150 years. The genesis of the credit rating can be traced to the 1840’s. However, the first mercantile credit rating agency was set up in New York in 1841 by Louis Tappen to rate the ability of merchants to pay their financial obligations. John Bradstreet set up a similar agency in 1849, which published its rating book in 1857. These two agencies merged together and formed Dun & Bradstreet in 1933, which acquired the Moody’s Investor Services in 1962. Moody’s have a long history in the rating business, spanning over a period of more than a hundred years. In 1900, John Moody founded Moody’s Investor Services. Several companies, such as Poor Publishing Company in 1916, Standard Statistics Company in 1921 and Fitch Publishing Company in 1924 published credit rates. Standard & Poor’s was set up by merging the Standard Statistics Company and the Poor’s Publishing Company in 1941. This was later carried over by McGraw Hill in 1966. Further, a number of credit rating agencies commenced operations all over the world. These included the Canadian Bond Rating Service (1972), Thomson Bankwatch (1974), Japanese Bond Rating Institute (1975), McCarthy Crisantis Maffei (1975), IBCA Ltd. (1978) and Duff & Phelps Credit Rating Company (1980) in India. The Credit Rating and Information Services of India Ltd. was set up as the first credit rating agency in 1987, followed by ICRA (Investment Information and Credit Rating Agency of India) In1991, and CARE (Credit Analysis and Research Limited) in 1994. The ownership patterns of all the three agencies are institutional. Duff and Phelps tied up with two Indian NBFCs to set up DCR India (Duff and Phelps Credit Rating India Limited) in 1996.

Concept of Credit Rating
The Credit rating is the process of assigning a symbol with reference to a specific instrument that acts as an indicator on the relative capability of the issuer to service its debt in a timely fashion. Ratings are usually expressed in alphabetical or alphanumerical symbols. It provides a relative ranking of the credit quality of debt/financial instruments according to their payment capability and willingness to pay.
Need of Credit Rating

The rated instrument gives various information to the stakeholders directly or indirectly. It is believed that ‘the instrument is rated not the company’. In fact, it is viewed by the scholar that when all the aspects of the company [for which the instrument is rated] are considered by credit rater while assigning/determining the credit-rate (or say credit strength of a company) then it is tantamount to ‘credit rate’. Anyhow, it is not that much critical point as the point is ‘why credit rating has become functional in the modern design of ‘debt issue’ market’? Credit rating (credit strength degree) furnishes many important functions for the interested parties in the issuing units. These parties are known as players with the corporate sector. It is credit rating that furnishes impartial information of high quality and truth. The players who know about the a, b, c and x, y, z of credit rating gain a wide varieties of information about the issuing-organization in the form of:

- Credit strength;
- Risk amount of investment in the debt instrument;
- Business risk of the rated companies;
- Low cost information useful for various parties [because some kinds of information about the rated company (or companies) are not publically available]
- Investors’ protection (directly or indirectly);
- Enjoyment of higher confidence by the rated company form the capital market players;
- Healthy control exercised over people and activities by the companies who borrow (higher credit rating to any credit investment tends to enhance the corporate image and visibility hence it creates a healthy discipline on corporate; Bhalla, 2011

In addition to above, credit rating serves for higher belief (or credence) to financial and other representation because the credit rating agency determining the rate goes deep into every aspect of financial, managerial, marketing, technical, business and future developmental programmes after finalizing the quality, truthfulness, and fairness of information provided to it by the corporate unit. That is why; the confidence and credibility of the financial and other non financial information go higher for other stakeholders also. Experts of this area (like Bhalla, 2011; Chandra, 2012; Khatri, 2013; Guruswami, 2011; Khan, 2010) also state that the ‘credit rating’ also helps in making the portfolios for institutional investors, mutual funds, and foreign investors. In fact, investors are directly benefited by many ways (like reduction in costs of borrowing, attracting a wide plus more areas and investors of the land, and for maintaining the long-stayed confidence of stakeholders).

How to understand rating and rating system

The rating grades are common with AAA as least risky, AA as less risky, A as more risky, B just adequate to service and C inadequate to service and highly risky and D is default prone
(detail of symbols given in Table-1.1). The agency rating will add their own prefix or suffix to those grades to indicate their stamp of rating. Thus, in India at present there are rating agencies, namely CRISIL, ICRA, CARE and Duff and Phelps etc. and now it has been made compulsory that companies issuing debt instruments (not convertible within 18 months) will have to get the rating and publish them. If a company is not satisfied with a rating of an agency, it can go to another agency.

Table-1.1

<table>
<thead>
<tr>
<th>Grades</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>AAA</td>
<td>The securities rated ‘AAA’ are judged to offer the highest safety against timely payment of interest and principal.</td>
</tr>
<tr>
<td>AA</td>
<td>The securities rated ‘AA’ are judged to offer the high safety against timely payment of interest and principal. They differ from AAA issues only marginally.</td>
</tr>
<tr>
<td>A</td>
<td>The securities rated ‘A’ are judged to offer the adequate safety against timely payment of interest and principal. However, changes in circumstances can adversely affect such issues more than those in the higher rated categories.</td>
</tr>
<tr>
<td>BBB</td>
<td>The securities rated ‘BBB’ are judged to offer sufficient safety against timely payment of interest and principal. However, changes in circumstances are more likely to lead to a weakened capacity to pay interest and repay the principal than in case of securities in higher rated categories.</td>
</tr>
<tr>
<td>BB</td>
<td>The securities rated ‘BB’ are judged to carry inadequate safety of the timely payment of interest and principal. While they are less susceptible to default than other speculative grade securities in the immediate future, the uncertainties that the issuer faces could lead to inadequate capacity to make interest and principal payments on time.</td>
</tr>
<tr>
<td>B</td>
<td>The securities rated ‘B’ are judged to have greater susceptibility to default. While currently interest and principal payments are met, adverse business or economic conditions would lead to a lack of ability or willingness to pay interest or principal.</td>
</tr>
<tr>
<td>C</td>
<td>The securities rated ‘C’ are judged to have factors present that make them vulnerable to default; timely payment of interest and principal is possible only if favorable circumstances continue.</td>
</tr>
<tr>
<td>D</td>
<td>The securities rated ‘D’ are in default and in arrears of interest or principal payments or are expected to default on maturity. Such securities are extremely speculative and returns from these securities may be realized only on reorganization or liquidation.</td>
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Limitations of Credit Rating

No doubt, Credit rating plays a significant role in investment decision making. But it has some limitations also, which are explained below:
a) Credit Rating only shows rater’s opinion about the credit worthiness of any instrument issuing company/entity. It is not recommended buying the instrument of any entity.
b) The information garnered by the rating authority may be subject to personal bias of the evaluation team.
c) The company being rated may not disclose certain material facts to the investigating team of the rating agency. This can affect the quality of credit rating.
d) Rating is done on the present and the past historic data of the company and this is only a static study. Prediction of the company’s health through rating is momentary and anything can happen after assignment of rating symbols to the company. Dependence for future results on the rating, therefore defeats the very purpose of risk inductiveness of rating. Many changes take place in the economic environment, political situation, and government policy framework which directly affects the working of a company.
e) Time factor affects’ rating, sometimes, misleading conclusions are derived. For example, a company in a particular industry might be temporarily in adverse condition, but it is given a low rating. This adversely affects the company’s interest.
f) Rating done by the two different credit rating agencies for the same instrument of the same issuer company in many cases would not be identical. Such differences are likely to occur because of value judgment differences on qualitative aspects of the analysis in tow different agencies.

Credit Rating Agencies

A credit rating agency is a company that assigns credit rates on debtor’s ability to pay back debt by making timely interest payments and the likelihood of default. An agency may rate the creditworthiness of the debt instruments issuer and in some cases, of the servicers of the underlying debt, but not of individual consumers.

The debt instruments rated by CRAs include government bonds, corporate debts, Certificate of Deposits, municipal bonds, preferred stock and collateralized securities, such as mortgage-backed securities and collateralized debt obligations.

The issuers of the obligations or securities may be companies, special purpose entities, state or local -profit organizations or sovereign nations. A credit rating agency facilitates the trading of governments, non securities on a secondary market. It affects the interest rate that a
security pays out, with higher ratings leading to lower interest rates. Individual consumers are rated for creditworthiness not by credit rating agencies but by credit bureaus (also called consumer reporting agencies or credit reference agencies), which issue credit scores. There are six credit rating agencies in India, engaged in credit rating business. Brief profile of these companies given as below:

**Credit Rating and Information Services of India Ltd. (CRISIL)**

As the first credit rating agency in India, the CRISIL was promoted in 1987 jointly by the ICICI Ltd. and the Unit Trust of India. Other shareholders include the Asian Development Bank, Life Insurance Corporation of India, HDFC Ltd., General Insurance Corporation of India and several foreign and Indian banks. It commenced operation on January 1, 1988. As a matter of fact, it pioneered the concept of credit rating in the country and has, since, been the vanguard of innovations by introducing new concepts in rating services and has diversified into related areas of information and advisory activities. It offered its share capital to the public in 1993. In 1996, the CRISIL forged a strategic business alliance with the Standard and Poor’s (S&P) Rating Group, New York. In May 1997, S&P acquired equity stake in the CRISIL. Apart from the financial collaboration, the CRISIL derives other benefits from this alliance, such as international experience, revamping of operating system, introduction of value added methodologies in new areas and assistance to the client companies in raising funds across country.

Initially, the CRISIL was set up to rate debt obligations that would guide investors to as to the risk of timely payment of interest and principal. Over the years it has crystallized the following main objectives:

- To assist both individual and institutional investors in making investment decisions in fixed interest securities;
- To enable companies to mobilize funds in large amount from a wide investor base, at a fair cost;
- To enable intermediaries to place debt instruments with investors by providing them with an effective marketing tool;
- To provide regulators with a market-driven system for bringing about discipline and a healthy growth of capital markets.
To achieve these objectives, the functions performed by the CRISIL fall under four broad categories/divisions of services; credit rating services, advisory services, credibility first rating and evaluation services and training services.

**Investment Information and Credit Rating Agency of India Limited (ICRA)**

The ICRA Ltd has been promoted by the IFCI Ltd. as the main promoter to meet the requirements of the companies based in the northern parts of the country. Apart from the main promoter, which holds 26% of the share capital, the other shareholders are the Unit Trust of India, banks, LIC, GIC, EXIM Bank, HDFC Ltd. and ILFS Ltd. It started operations in 1991. In order to bring international experience and practice to the Indian capital markets, the ICRA has entered into a MOU with Moody’s Investors Services to provide, through its company, Finance Programmes Inc (FPI), credit education, risk management software, credit research and consulting services to banks, financial/investment institutions, financial services companies and mutual funds in India. As in the case of the CRISIL, the main objectives of the ICRA are;

- To assist investors, both individual and institutional, in making well informed decisions;
- To assist issuers in raising funds, from a wider investor base, in large amounts and at a lower cost for highly rated entities;
- To enable banks, investment bankers, brokers in placing debt with investors by providing them with a large marketing tool
- To provide regulators with market driven systems encourage the healthy growth of the capital market in disciplined manner, without additional burden on the government.

Over the years the ICRA has diversified the range of its services. It currently provides three types of services; rating services, information services and advisory services.

**Credit Analysis and Research Ltd. (CARE)**

The CARE Ltd. is a credit rating and information services company promoted by the Industrial Development Bank of India (IDBI) jointly with financial institutions, public/private sector banks and private finance companies. It commenced its credit rating operations in 1993 and offers a wide range of products and services in the field of credit information and equity research. Unlike the CRISIL and the ICRA, the CARE is very cautious in entering new areas
of business. Currently, it offers the following services; credit rating services, advisory services, information services, equity research, and other rating services.

**Fitch Ratings India Private Ltd.**

Fitch Ratings was founded as the Fitch Publishing Company on December 24, 1913 by John Knowles Fitch. Located in the heart of the Financial District in New York City, the Fitch Publishing Company began as a publisher of financial statistics. In 1924, the Fitch Publishing Company first introduced the now familiar "AAA" to "D" ratings scale to meet the growing demand for independent analysis of financial securities. Fitch Ratings was one of the three ratings agencies first recognized by the Securities and Exchange Commission as a Nationally Recognized Statistical Rating Organization (NRSRO) in 1975.

**Brickwork Ratings India Private Limited**

Brickwork Ratings, a SEBI, RBI & NSIC registered credit rating agency offers Bank Loan, NCD, Commercial paper, MSME ratings and other grading services. Brickwork has a presence in Bangalore, New Delhi, Mumbai, Chennai, Hyderabad, Kolkata as well as forty cities in India.

Brickwork Ratings has already rated over Rs 200,000 crores of bank loans and bonds. The company has rated a large number of big listed entities, hundreds of bank loans and a very large number of MSME. Bank loan ratings cover all bank fund based and non fund based facilities like Cash Credit, Packing credit, term loans, letter of credit, bank guarantees etc. Bank loan ratings offer several benefits for the companies. They fulfill Basel regulations followed by the RBI and the banks. Companies rated better, can negotiate lower interest rates from the bank. Well rated firms that follow good governance, get higher valuations. While Indian financial markets have been liberalized in the past two decades, useful information is still scarce. Complex structures, inadequacy of information and below-average disclosures make it difficult for retail investors to make sense of financial markets. No wonder small investors always lose money in every market crash. Brickwork's ratings for large corporate customers, SMEs, banks, financial institutions, state and local governments, help investors understand the complexity of the investment world. Brickwork is founded by bankers, credit rating professionals, former regulators as well as professors, is committed to promoting Financial Literacy.
SMEs Rating Agency of India Ltd. (SMERA)

SMERA Ratings Limited (formerly SME Rating Agency of India Ltd.) is a joint initiative of Small Industries Development Bank of India (SIDBI), Dun & Bradstreet Information Services India Private Limited (D&B) and leading public and private sector banks in India. SMERA commenced its operations in 2005 as an exclusive credit rating agency for Micro, Small and Medium Enterprises (MSME) sector in the country. Within a span of 8 years, SMERA has assigned ratings to over 29044 MSMEs pan India. SMERA is registered with the Securities and Exchange Board of India (SEBI) as a Credit Rating Agency (6th in India). More recently, the Company has received accreditation from the Reserve Bank of India (RBI) as an External Credit Assessment Institution (ECAI) under BASEL - II norms for undertaking bank loan ratings. SMERA is also empanelled as an approved rating agency by the National Small Industries Corporation Ltd. (NSIC) under the "Performance & Credit Rating Scheme for Small Industries", approved by the Ministry of Small Scale Industries, Government of India. Today, SMERA has achieved the reputation of providing comprehensive, transparent and reliable ratings, thus providing comfort and confidence to lenders and investors alike in decision making. SMERA Ratings have gained wide acceptability and are now an integral part of the risk assessment process within the lending and investing community. SMERA, which has its Registered and Head Office in Mumbai, currently operates from 13 locations spread across the country.

Credit Rating Process
The rating process begins with the receipt of formal request from a company desirous of having its issue obligations rated by credit rating agency. A credit rating agency constantly monitors all ratings with reference to new political, economic and financial developments and industry trends. The process/procedure followed by all the major credit rating agencies in the country is almost similar and usually comprises of the following steps.

Receipt of the request
The rating process begins, with the receipt of a formal request for rating from a company desirous of having its issue obligations under the proposed instrument rated by credit rating agencies. An agreement is entered into between the rating agency and the issuer company. The agreement spells out the terms of the rating assignment and covers the following aspects:

i) It requires the CRA (Credit Rating Agency) to keep the information confidential.
ii) It gives right to the issuer company to accept or not to accept the rating.

iii) It requires the issuer company to provide all material information to the CRA for rating and subsequent surveillance.

Assignment to analytical team
On receipt of the above request, the CRA assigns the job to an analytical team. The team usually comprises of two members/analysts who have expertise in the relevant business area and are responsible for carrying out the rating assignments.

Obtaining information
The analytical team obtains the requisite information from the client company. Issuers are usually provided a list of information requirements and broad framework for discussions. These requirements are derived from the experience of the issuer’s business and broadly confirms to all the aspects which have a bearing on the rating. The analytical team analyses the information relating to its financial statements, cash flow projections and other relevant information.

Plant visits and meeting with management
To obtain classification and better understanding of the client’s operations, the team visits and interacts with the company’s executives. Plants visits facilitate understanding of the production process, assess the state of equipment and main facilities, evaluate the quality of technical personnel and form an opinion on the key variables that influence level, quality and cost of production. A direct dialogue is maintained with the issuer company as this enables the CRAs to incorporate non-public information in a rating decision and also enables the rating’ to be forward looking. The topics discussed during the management meeting are wide ranging including competitive position, strategies, financial policies, historical performance, risk profile and strategies in addition to reviewing financial data.

Presentation of findings
After completing the analysis, the findings are discussed at length in the Internal Committee, comprising senior analysts of the credit rating agency. All the issues having a bearing on rating are identified. An opinion on the rating is also formed. The findings of the team are finally presented to Rating Committee.

Rating committee meeting
This is the final authority for assigning ratings. The rating committee meeting is the only aspect of the process in which the issuer does not participate directly. The rating is arrived at after composite assessment of all the factors concerning the issuer, with the key issues getting greater attention.
Communication of decision
The assigned rating grade is communicated finally to the company has decided to use the rating; CRAs are the issuer along with reasons or rationale supporting the rating. The ratings which are not accepted are either rejected or reviewed in the light of additional facts provided by the issuer. The rejected ratings are not disclosed and complete confidentiality is maintained.

Dissemination to the public
Once the issuer accepts the rating, the credit rating agencies disseminate it through printed reports to the public.

Monitoring for possible change
Once obliged to monitor the accepted ratings over the life of the instrument. The CRAs constantly monitors all ratings with reference to new political, economic and financial developments and industry trends. All this information is reviewed regularly to find companies for, major rating changes. Any changes in the rating are made public through published reports by CRAs.

Rating Mechanism used by credit rating agencies:
Rating methodology used by the major Indian credit rating agencies is more or less the same. The rating methodology involves an analysis of all the factors affecting the creditworthiness of an issuer company (business, financial and industry characteristics, operational efficiency, management quality, competitive position of the issuer and commitment to new projects etc.). A detailed analysis of the past financial statements is made to assess the performance and to estimate the future earnings. The company’s ability to service the debt obligations over the tenure of the instrument being rated is also evaluated. In fact, it is the relative comfort level of the issuer to service obligations that determine the rating. While assessing the instrument, the following are the main factors that are analyzed into detail by the credit rating agencies:
1. Business Risk Analysis
2. Financial Analysis
3. Management Evaluation
4. Geographical Analysis
5. Regulatory and Competitive Environment
6. Fundamental Analysis
These are explained as under:

**I. Business Risk Analysis**

Business risk analysis aims at analyzing the industry risk, market position of the company, operating efficiency and legal position of the company. This includes an analysis of industry risk, market position of the company, operating efficiency of the company and legal position of the company.

a) **Industry risk**

The rating agencies evaluate the industry risk by taking into consideration various factors like strength of the industry prospect, nature and basis of competition, demand and supply position, structure of industry, pattern of business cycle, etc. Industries compete with each other on the basis of price, product quality, distribution capabilities etc. Industries with stable growth in demand and flexibility in the timing of capital outlays are in a stronger position and therefore enjoy better credit rating.

b) **Market position of the company**

Rating agencies evaluate the market standing of a company taking into account Percentage of market share, Marketing infrastructure, Competitive advantages, Selling and distribution channel, Diversity of products, Customer base, Research and development projects undertaken to identify obsolete products and Quality Improvement programs etc.

c) **Operating efficiency**

Favorable locational advantages, management and labor relationships, cost structure, availability of raw-material, labor, compliance with pollution control programs, level of capital employed and technological advantages etc. affect the operating efficiency of every issuer company and hence the credit rating.

d) **Legal position**

The legal position of a debt instrument is assessed by letter of offer containing terms of issue, trustees and their responsibilities, mode of payment of interest and principal in time, provision for protection against fraud etc.

e) **Size of business**

The size of the business of a company is a relevant factor in the rating decision. Smaller companies are more prone to risk due to business cycle changes as compared
to larger companies. Smaller companies’ operations are limited in terms of product, geographical area and number of customers. Whereas, large companies enjoy the benefits of diversification owing to a wide range of products, customers spread over a larger geographical area. Thus, business analysis covers all the important factors related to the business operations over an issuer company under credit assessment.

II. Financial Analysis

Financial analysis aims at determining the financial strength of the issuer company through quantitative means such as ratio analysis. Both past and current performance is evaluated to comment the future performance of a company. The areas considered are explained as follows.

a. Accounting quality

As credit rating agencies rely on the audited financial statements, the analysis of statements begins with the study of accounting quality. For the purpose, qualification of auditors, overstatement/understatement of profits, the methods adopted for recognizing income, valuation of stock and charging depreciation on fixed assets are studied.

b. Earnings potential/profitability

Profits indicate a company’s ability to meet its fixed interest obligation on time. A business with stable earnings can withstand any adverse conditions and also generate capital resources internally. Profitability ratios like operating profit and net profit to sales are calculated and compared with last 5 years figures and compared with the similar other companies carrying on the same business. As a rating is a forward-looking exercise, more emphasis is laid on the future rather than the past earning capacity of the issuer.

c. Cash flow analysis

Cash flow analysis is undertaken in relation to debt and fixed and working capital requirements of the company. It indicates the usage of cash for different purposes and the extent of cash available for meeting fixed interest obligations. Cash flows analysis
facilitates credit rating of a company as it better indicates the issuer’s debt servicing capability compared to reported earnings.

d. Financial flexibility

Existing Capital structure of a company is studied to determine the debt/equity ratio, alternative means of financing used to raise funds, ability to raise funds, and asset deployment potential etc. The future debt claims on the issuer’s ability to raise capital is determined in order to find issuer’s financial flexibility.

III. Management Evaluation

Any company’s performance is significantly affected by the management goals, plans and strategies, capacity to overcome unfavorable conditions, staff’s own experience and skills, planning and control system etc. Rating of a debt instrument requires evaluation of the management strengths and weaknesses.

IV. Geographical Analysis

Geographical analysis is undertaken to determine the location advantages enjoyed by the issuer company. An issuer company having its business spread over a large geographical area enjoys the benefits of diversification and hence gets a better credit rating. A company located in backward area may enjoy subsidies from government, thus enjoying the benefit of lower cost of operation. Thus, the geographical analysis is undertaken to determine the location advantages enjoyed by the issuer company.

V. Regulatory and Competitive Environment

Credit rating agencies evaluate the structure and regulatory framework of the financial system in which, it works. While assigning the rating symbols, CRAs evaluate the impact of regulation/deregulation on the issuer company.

VI. Fundamental Analysis

Fundamental analysis includes an analysis of liquidity management, profitability and financial position, interest and tax rate sensitivity of the company.

1. Liquidity management involves the study of capital structure, availability of liquid assets corresponding to financing commitments and maturing deposits, matching of assets and liabilities.
2. Asset quality covers factors like quality of a company’s credit risk management, exposure to individual borrowers and management of problem credits etc.

3. Profitability and financial position covers aspects like past profits, funds deployment, revenues on non-fund based activities, addition to reserves.

4. Interest and tax sensitivity reflects the sensitivity of the company following the changes in interest rates and changes in tax law. Fundamental analysis is undertaken for rating debt instruments of financial institutions, banks and non-banking finance companies.

**Credit Rating of Instruments**

The Credit rating is the process of assigning standard scores which summarize the probability of the issuer being able to meet its repayment obligations for a particular debt instrument in a timely manner. A credit rating is integral to debt markets as it helps market participants to arrive at quick estimates and opinions about various instruments. In this manner it facilitates trading in debt and money market instruments, especially in instruments other than the Government of India Securities. The rating is usually assigned to a specific instrument rather than the company as a whole. In the Indian context, the rating is done at the instance of the issuer, which pays rating fees for this service. If it is unsatisfied with the rating assigned to its proposed instrument, it is at liberty not to disclose the rating given to it.

**Grading System**

Each of the rating agencies has different codes for expressing rating for different instruments; however, the number of grades and sub-grades are similar e.g. for long term debentures/bonds and fixed deposits, CRISIL has 4 main grades and a host of sub-grades. In decreasing order of quality, these are AAA, AA+, AA, AA-, A+, A, A-, BBB-, BBB, BBB+, BB+, BB, BB-, B+, B, B-, C and D. ICRA, CARE and Duff and Phelps have similar grading systems.

Credit rating is a dynamic concept and all the rating companies are constantly reviewing the companies rated by them with a view to changing (either upgrading or downgrading) the rating. They also have a system whereby they keep ratings for particular companies on “rating watch” in case of major events, which may lead to changes in rating near future. Ratings are made public through periodic newsletters issued by rating companies, which also elucidate briefly the rationale for particular ratings. In addition, they issue press releases to all major newspapers and wire services about rating events on a regular basis.
Factors Involved in Credit Rating

Credit rating depends on several factors, some of which are tangible/numerical and some of which are judgmental and intangible. These factors are listed below:

- Overall fundamentals and earnings capacity of the company and volatility of the same
- Overall macro economics and business/industry environment
- Liquidity position of the company (as distinguished from profits)
- Requirement of funds to meet irrevocable commitments
- Financial flexibility of the company to raise funds from outside sources to meet temporary financial needs
- Guarantee/support from financially strong external bodies
- Level of existing leverage (borrowings) and financial risk

As mentioned earlier ratings are assigned to instruments and not to companies and two different ratings may be assigned two different instruments of the same company e.g. a company may be in a fundamentally weak business and may have a poor rating assigned for 5 year debentures while its liquidity position may be good, leading to the highest possible rating for a 3 month commercial paper. Very few companies may be assigned the highest rating for a long term 5 or 7 year instrument, e.g. CRISIL has only 20 companies rated as AAA for long term instruments and these companies include unquestionable blue chips like Videsh Sanchar Nigam, Bajaj Auto, Bharat Petroleum, and Nestle India apart from institutions like ICICI, IDBI, HDFC and SBI.

Ratios used in Credit Rating

Ratio analysis is a strong tool in measuring financial position and performance of a firm or it can be stated that ratios are used as benchmark for evaluating the financial position and performance of a firm. A firm has a large number of financial data in its financial statements and schedules, ratio help to summarize that data to make quantitative judgment about the firm’s financial performance. Generally the 8 ratios (Operating profit margin, Gross profit margin, EBIT margin, Return on capital employed, Return on equity, Current ratio, Interest Coverage Ratio and Debt-Equity Ratio) are considered by the credit rating agencies while determining the Z-Score to rate the credit strength of the firm. Z-Score is a tool in the assessment of solvency power (or position) of a company along with the other solvency ratios Z-Score and Ratios introduced here as under:
Gross Profit Margin Ratio (GPM)

This ratio reflects the efficiency with which management produces each unit of product. This ratio indicates the average spread between the cost of goods sold and sales revenue. When we subtract the gross profit margin from 100%, we obtain the ratio of cost of goods sold to sales. Both these ratios show profits relative to sales after the deduction of production costs. A high GPM ratio is sign of good management and a low gross profit margin may reflect higher cost of goods sold due to the firm’s inability to purchase raw material. The financial manager must be able to detect the causes of a falling gross margin and initiate action to improve the situation.

Operating Profit Margin Ratio (OPM)

Operating profit margin ratio establishes a relationship between operating profit and net sales and indicates management’s efficiency in manufacturing, administering and selling the products. This ratio is the overall measure of the firm’s ability to turn each rupee sales into operating profit. If the operating margin is inadequate, the firm will fail to achieve satisfactory return on shareholders’ fund. This ratio also indicates the firm’s capacity to withstand adverse economic conditions. A firm with a high operating margin ratio would be in an advantageous position to survive in the face of falling selling prices, rising cost of production or declining demand for the product. It would really be difficult for a low operating margin firm to withstand these adversities. Similarly, a firm with high operating profit margin can make better use of favorable conditions, such as rising selling prices, falling cost of production or increasing demand for the product.

An analyst will be able to interpret the firm’s profitability more meaningfully. If he evaluates both the ratios, gross profit margin and operating profit margin jointly. If gross profit margin has increased over the years, but operating profit margin either remained constant or declined or has not increased as fast as gross profit margin; it implies that the operating expenses relative to sales have been increasing. As a consequence, net profit will decline unless operating expenses decreasing significantly. The crux of the argument is that both the ratios should be jointly analyzed and each item of expense should be thoroughly investigated to find out the causes of decline in any or both the ratios.

Return on Capital Employed (ROCE)

Capital employed implies the long term funds effectively employed in the business. The returns corresponding to such a capital invested should be calculated on the basis of ‘operating profit’. It is a prime test of managerial efficiency or the efficiency of a business as
a whole and measures overall profitability of a business. With the help of this ratio inter-firm and intra-firm comparisons can easily be made and important decisions taken after useful comparision.

**Return on Equity (ROE)**

Common or ordinary shareholders are entitled to the residual profits. The rate of dividend is not fixed; the earnings may be distributed to shareholders or retained in the business. Nevertheless, the net profits after taxes represent their return. A return on shareholders’ equity is calculated to see the profitability of owners ‘investment. The shareholders’ equity or net worth will include paid-up share capital, share premium and reserves and surplus less accumulated losses. Net worth can also be found by sub reacting total liabilities form total assets. The return on equity is net profit after taxes divided by shareholders’ equity which is given by net worth.

ROE indicates how well the firm has used the resources of owners. In fact, this ratio is one of the most important relationships in financial analysis. The earning of the satisfactory return is the most desirable objective of a business. The ratio of net profit to owners’ equity reflects the extent to which this objective has been accomplished. The ratio is, thus, of the great interest to the present as well as the prospective shareholders and also of great concern to the management, which has the responsibility of maximizing the owners, welfare.

The return on owners’ equity of the company should be compared with the ratio for other similar companies and the industry average. This will reveal the relative performance and strength of the company in attracting future investments.

**Current Ratio**

Current assets include cash and those assets that can be converted into cash within a year, such as marketable securities, debtors and inventories. Prepaid expenses are also included in current assets they represent the payments that will not be made by the firm in the future. All obligations maturing within a year are included in current liabilities. Current liabilities include creditors, bills payable, accrued expenses, short-term bank loan, income-tax liability and long-term debt maturing in the current year. The current ratio is measure of the firm’s short-term solvency. It indicates the availability of current assets in rupees for every one rupee of current liability. A ratio of greater than one means that the firm has more current assets than current claims against them.

The current ratio represents a margin of safety for creditors. Higher current ratio, shows greater margin of safety; larger the amount of current assets in relation to current liabilities,
more the firm’s ability to meet its current obligations. However, an arbitrary standard of 2 to 1 should not be blindly followed. Firms with less than 2 to 1 current ratio may be doing well, while firms with 2 to 1 or even higher current ratios may be struggling to meet their obligations. This is so because the current ratio is a test of quantity, not quality. The current ratio measures only rupees’ worth of current assets and total rupees’ worth of current liabilities. It does not measure the quality of assets. Liabilities are not subject to any fall in value; they have to be paid. But current assets can decline in value. If the firm’s current assets consists of doubtful and slow-paying debtors or slow-moving and obsolete stock of goods, then the firm’s ability to pay bills is impaired; its short term solvency is threatened. Thus, too much reliance should not be placed on the current ratio; a further investigation about is necessary. However, the current ratio is a crude-and-quick measure of the firm’s liquidity.

**Debt-Equity Ratio**

Several debt ratios may be used to analyze the long-term Solvency of a firm. The firm may be interested in knowing the proportion of the interest-bearing debt (also called funded debt) in capital structure. It may, therefore, compute debt equity ratio by dividing total debt by net-worth.

**Interest Coverage Ratio (ICR)**

Debt ratios are static in nature, and fail to indicate the firm’s ability to meet interest (and other fixed charges) obligations. The interest coverage ratio or the times-interest-earned is used to test coverage ratio is computed by dividing earnings before interest and taxes (EBIT) by interest charges:

The interest coverage ratio shows the number of times the interest charges are covered by funds that are ordinarily available for their payment. Since taxes are computed after interest, interest coverage is calculated in relation to before-tax earnings. Depreciation is a non-cash item. Therefore, funds equal to depreciation are also available to pay interest charges. We can thus calculate the interest coverage ratio as earnings before interest taxes, depreciation and amortization (EBITDA) divided by interest: This ratio indicates the extent to which earnings may fall without causing any embarrassment to the firm regarding the payment of the interest charges. A higher ratio is desirable; but too high a ratio indicates that the firm is very conservative in using debt, and that it is not using credit to the best advantage of shareholders. A lower ratio indicates excessive use of debt to have a comfortable coverage ratio. The limitation of the interest coverage ratio is that it does not consider repayment of loan. Therefore, a more inclusive ratio- the fixed-charges-is calculated. This ratio is
calculated by dividing EBITDA by interest plus principal repayment: Depreciation and other non-cash charges are added to the numerator to provide a coverage measure in terms of cash flow rather than earnings. It should be obvious that a high level of debt is a problem for a company only if its future cash flows (earnings being a large component) are uncertain. An analyst, therefore, may analyze the variability of the company’s cash flows (or earnings) over time. This may be done by calculating the standard deviation of yearly changes in cash flows (or earnings) relative to the average level of cash flows (or earnings).

**Altman Z-Score**

This formula developed in 1968 by Edward I. Altman, who was, at that time, an assistant professor of finance at New York University.

This formula used to predict the bankruptcy position of a firm. It is used to predict corporate default and financial health of a company. This formula is a linear combination of five business ratios, weighted by coefficients. The coefficients were estimated by identifying a set of firms which has declared bankruptcy and then collected a matched sample of firms which had survived, with matching by industry and approximate size.

The formula is:

\[
Z = 1.2 \ T_1 + 1.4 \ T_2 + 3.3 \ T_3 + 0.6 \ T_4 + 0.99 \ T_5
\]

- **T1** = Working Capital/Total Assets
  - It measures the liquid assets position in relation to the size of the company.
- **T2** = Retained Earning/Total Assets
  - It measures profitability that reflects the company’s age and earning power.
- **T3** = Earnings before interest and tax/Total assets
  - It measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long term viability.
- **T4** = Book Value of Equity/Book Value of Total Liabilities
  - It Measures the wealth of shareholders in comparison of total liabilities.
- **T5** = Sales/Total Assets
  - It measures the sales in comparison to total assets.

It shows three dimensions below 1.81, between 1.81 and 2.99 and above 2.99 as Distress, Gray zones and Safe zones respectively.